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Textile World

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A Message: Muffled but Discernible

PRESUMABLY, opportunity has been given recently for the expression of the best and most constructive thought in business, not only in this country but throughout the world. Certainly, if that thought was not adequately represented at the meeting of the Chamber of Commerce of the United States in Atlantic City, and at the meeting of the International Chamber of Commerce the following week in Washington, it is hopeless to expect it in a gathering under any other auspices.

In view of the prominence of the men scheduled to speak, and of the diverse nations and interests which they represented, business had looked to these meetings for guidance—for a clear indication of the "way out."

Those observers with whom we have contacted, have expressed a sense of disappointment. They found no banner under which they could enroll.

The fault, we believe, was not with the world leaders, but with the expectations of the onlookers. Society is too complex today to permit of panaceas.

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Furthermore, we are not at all convinced that a "way out" was not indicated at this meeting.

To be sure, it did not emerge, in a positive way, from the discussions as a whole. The message may be discerned by inference; in fact, almost by a process of negative reasoning.

The tendency on the part of so many of the speakers to look backward instead of forward, their resistance to broad-gauged remedies that have been proposed, reflected a fundamental defect in present-day thinking—and, inversely, pointed to its correction as a prime need.

Through this process of logic, we get the following message from both meetings: *Plan for the future!*

No element of weakness was dissected, no element of strength extolled, without the implied corollary warning that the former could not be corrected nor the latter utilized unless objectives were defined and a program of approach toward those objectives outlined. Nor does this responsibility rest upon any one group — but upon all Governments, all industries through their collective agencies, and business men and their employees individually.

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To be specific, there is needed the type of unified approach to future problems which formed the basis of the McGraw-Hill Platform for American Business, and of our own group of textile objectives as set down in our Editorial Inventory.

"Oh, that's academic," stated one man to whom we made the above observation.

And his remark, we believe, reflects the real trouble with business today. Until the idea of future planning—within a country, within an industry, and within the sphere of each individual engaged in that industry —ceases to be regarded as academic and abstract, and becomes a practical working tool, there will be no real progress, no assurance of immunity from future crises.

The Week in Textiles

as Reflected in This Issue

General

Lowell Alumni Gather
Annual alumni reunion of Lowell Textile Institute was featured by technical session on cotton, wool and chemistry. *(page 25)*

Productive Capacity
Fable of "Why the Sea is Salt" points moral to textile industry in handling productive capacity. *(page 28)*

Suggestions from Employees
Assurance that systematic and unbiased investigations will be made and that rewards will be paid commensurate with the savings effected is one of the chief requisites of any suggestion system which is worth installing. *(page 29)*

Microanalysis of Yarns
Use of the microscope in textile mills to disclose yarn defects proves to be a valuable aid in minimizing corkscrew and distortion in plied yarns. *(page 30)*

Schwab Enters Textiles
Charles M. Schwab has entered the textile industry, with the aim, if his first venture develops satisfactorily, of extensive operations in this field. Through his brother, E. H. Schwab, the steel magnate has acquired several silk throwing mills in Pennsylvania and a selling agency, and plans to modernize these plants and operate them on thoroughly up-to-date principles. *(page 56)*

Cotton

Promotion Activities Increase
Idea of "National Cotton Week" has caught on and gains impetus. Buying stimulus expected to extend to other lines of textile industry. *(page 21)*

Cotton Reacts from Low
Raw cotton touched new lows last Tuesday when stock market weakness was reflected in already poorly supported cotton. *(page 45)*

Cotton Yarns in Poor Shape
Continual decline in cotton has affected confidence in cotton yarns and the market has been less active than any time this year. Short-selling also a factor. *(page 45)*

Cotton Goods Improved Tone
Action of cotton goods the last two weeks may mean that the usual May-June dullness will be upset this year. Prices have been revised to a bargain level and several large buyers have been stimulated into summer contracting. *(page 49)*

Wool

Wool Top Exchange
Possibilities offered to manufacturers, wool dealers, and others, by futures trading in tops, inaugurated this week, are outlined. *(page 18)*

Imported Worsted Fabric
New version of worsted fabric from France, a light-weight fabric in a fine twill weave, is attracting attention. Possibilities are noted and popularity predicted. *(page 20)*

Neps in Worsted Sliver
Five carding faults are suggested as possible causes for neps in worsted sliver. *(page 34)*

Sales Worsted Yarns Active
Men's wear mills are taking large amounts of mixture yarns and good interest continues from swimsuit trade. The latter is about to pass its peak for season. *(page 47)*

Low Price Men's Wear Selling
Sellers who specialize in low price men's wear in worsted or woolen report active call for heavyweight lines. Business is not equally distributed, there being numerous firms who still find trading barely fair. *(page 49)*

Wool Overseers Hold Meeting
Annual spring gathering of National Association of Woolen and Worsted Overseers was held at Rocky Point, R. I. *(page 54)*

Votes Point to Night Work Cut
First ballots in the vote Wool Institute is taking on question of elimination of night work by women and minors indicate majority approval for the proposition. *(page 56)*

Goodall Worsted to Make Suits
Goodall Worsted Co., makers of Palm Beach cloth, after present season will make the cloth into Palm Beach suits, discontinuing sale of the fabric to clothing manufacturers and getting closer to the consumer. *(page 56)*

Knitting

Modern Tricot
Today excellent tricot fabrics are being knitted at high speed. *(page 24)*

The Textile Outlook

THERE is evidence that several branches of the textile market have touched another bottom and are due for price firming and better business at least for a time. Like many diseases, price-cutting, once started, seems destined to run a course which cannot be much modified by medication or treatment. Such a course has been completed in several textile fields, which gives real hope for convalescence. To put the patient on his feet requires a better general business climate than we find at present, but at least he can be brought back to health and make himself useful within the four walls of his own house. A fair June is in prospect and if the usual fall upturn comes early enough the usual dullness of summer may be partly overcome . . . Cotton goods are firmer with better, though still narrow, trade. Wool goods hold the center of the stage as doing better than for several years. Silk goods are hopeful of improving after their price cutting orgy. Knit goods are generally better with seasonables moving well.

Sleazy Full-Fashioned Hosiery

Loose knitting and the use of narrow boards are responsible for sleaziness in full-fashioned stockings. *(page 33)*

Holes in Circular Stockings

Faulty sinker timing is blamed for drop stitches in the looper's course of circular stockings *(page 34)*

Inspecting Hosiery

An electrically operated hosiery-inspecting machine has been announced which relieves the operator of practically all physical effort in inspecting and thereby allows her to concentrate her attention in searching for defects. *(page 36)*

Mesh Full-Fashioned Active

Mesh full-fashioned lines are big sellers in the higher price field while cheap full-fashioned continues to move well; 50c. full-fashioned has made appearance in retail stores. *(page 50)*

Swimsuit Rush Continues Unabated

Further advances in prices of bathing-suits have been made, $1 to $1.50, and buyers have again been notified that they must wait longer for delivery. Late season may affect fall sweater situation. *(page 50)*

Underwear Improves Slowly

May will be a better month than April for underwear. There is more interest in fall goods although still hesitant. Women's fancy rayon panties have been active this week. *(page 50)*

Silk

Weak Raw Silk Prices Predicted

A continuation of weakness in raw silk prices for the next month or two, with the possibility of new lows, appears likely to Dr. Lewis H. Haney, writing in the Textile World Analyst this week. Domestic statistical situation improved, but world situation has not. *(page 41)*

Silk Undertone Firmer

Raw silk continues to fluctuate, but undertone is firmer, due to Japanese strengthening. Outlook uncertain. *(page 48)*

Spinners Confident for Fall

Active sampling and many inquiries from weavers encourage silk spinners to look for good fall season, in July. *(page 48)*

Novelty Broadsilks Promising

In a generally weak broadsilk market, novelty fabrics hold steady and promise to be one of the few profitable lines of the season. *(page 49)*

Heads Mallinson

E. Irving Hansen elected president of H. R. Mallinson & Co., Inc., to succeed Hiram R. Mallinson. *(page 55)*

Leaves Stehli

Paul Hyde Bonner has resigned as vice-president and director of Stehli Silks Corp. and will engage in research in France. *(page 55)*

Goodall Move Significant

THE textile mill of the future will be directly concerned with the production of certain types of clothing, floor covering, and other items of advanced manufacture."

When we made that statement in these columns last December we were repeating a thought which we have entertained for many years. Consequently, we are deeply impressed with the significance of Goodall Worsted Co.'s announcement that in the future it will produce through a subsidiary not only Palm Beach cloth, but, exclusively, suits from that cloth.

The advantages mentioned by the company are obvious. They include control over the finished product which carries their trade name; close contact with the consuming field; marked economies which should mean a new type of value for the retailer and the public.

Goodall has thus joined the select, but we hope growing, group of textile manufacturers who see a real opportunity in the extension of their activities to include further fabrication of their products.

Rayon

Looms

Practically any silk loom is suitable for a simple rayon fabric submitted. *(page 33)*

Rayon Active

High-pressure buying continues, and general clearance is helping toward a firm position for producers in fall. *(page 48)*

Processing

Water Purification

Recent developments in water purification make it possible to remove hardness, iron, color, algae, and other impurities and to supply textile mills with water, which—regardless of its source—is suitable for process work. *(page 26)*

Finishing Felt

Methods employed in finishing papermaker's felts vary in detail according to the type of stock used, the kind of oil employed, and the equipment available. Typical formulas are given. *(page 33)*

Dyeing Hosiery

Streaks and distortions in silk hosiery are traced to incomplete degumming. A method is suggested to eliminate these defects. *(page 34)*

Polishing Linen Thread

Proper adjustment of the brush dressing machine is shown to be essential in finishing linen thread if best results are to be obtained. *(page 35)*

Boarding Hosiery

Drying of various sizes and shapes of hosiery on one form is made possible with an improved metal drying form announced recently. *(page 36)*

The Business Outlook

THE unrelieved monotony of general trade stagnation shown in the weekly indicators tends to obscure underlying currents of encouragement and tempts the imaginative to dramatize the tedium with rumors of further difficulties impending. Our index, still oscillating around the depression level, neither fully reflects these undercurrents nor justifies these fears. The continuous cautious rise of the Federal Reserve Board's monthly production volume index since the beginning of the year, for the first time in the course of the decline, is undoubtedly significant. The relative strength of residential building is one of certain other straws that suggest slow improvement in fundamental factors. Most important of all is the plain indication that Federal Reserve credit policy is pointed toward expansion and that its persistent pressure is beginning to break down resistance in the interest rate structure and to bring reassuring results in the bond market, at least for the large governmental issues, and to support public construction.—*The Business Week.*

Possibilities Offered by Wool Top Exchange

By James A. Austin

New England Editor, TEXTILE WORLD

SOME years ago the purchase or sale of securities through the Stock Exchange was quite a mysterious business to the average person, but the mass buying of 1928-29 brought home the fact that, behind the barrier of technical terms, operations were fairly simple. Similarly, the jargon of the commodity exchanges has created for the outsider an illusion of complicated goings-on, with each neophyte playing in the rôle of "sucker" through a long and thorough initiation. However, while out-and-out "playing the market" may require a great amount of technical skill if losing one's shirt is to be avoided, many textile men have found that sensible use of a commodity exchange is a sane operation which will minimize losses from fluctuating raw material, and which requires no highly developed technique.

Wool Top Exchange Opens

Futures trading in wool tops, which began May 18 on the floor of the New York Cotton Exchange and which will be carried on by the Wool Associates of the New York Cotton Exchange, Inc., offers two simple possibilities to the wool manufacturer or dealer. They are:

1. Minimizing losses on inventories.
2. Flexible means of exercising judgment on market.

Standard of trading will be an average American 64s top, oil combed and containing the normal 3% of oil, including natural fat. Unit of trading will be 5,000 lb.

The first obstacle which many manufacturers will see is that they themselves do not use 64s tops. The answer is that a manufacturer does not have to use 64s tops to be able to make use of the futures market. The standard was picked because it was believed that fluctuations in 64s tops would parallel fluctuations in other grades.

Disregarding for the moment any difference in fluctuations, to which we will refer later, the wool manufacturer who wishes to minimize losses in inventory would proceed somewhat as follows: Having 100,000 lb. of wool in the plant (raw material, stock in process and finished goods, reduced to clean content) against which there were no customer orders, consisting of ½ and ¼ blood wools, the manufacturer is faced with a considerable shrinkage in inventory values if the price of wool declines. To avoid this loss, he merely sells an equivalent clean content dollar value of futures on the exchange. The clean content value of the tops is the market value less an estimated processing charge of 13c. Knowing the actual value of the wool it is easy to figure the poundage which will give the equivalent value on the exchange. Let us say that he sells 64s tops at 90c. October contract. By October the wool market has declined and the manufacturer shows a loss of 2c. per lb. on his inventory of ½ and ¼ blood wool. The 64s tops, however, have likewise declined. The manufacturer has agreed to sell at 90c., so he buys a contract at the lower price to cancel his sale, thus making a profit which equals the inventory loss. In all such hedging transactions, he does not deliver nor take delivery of a pound of actual tops.

Naturally, the process is a continuous one, rather than an isolated case as illustrated above. The simple theory is to keep sold on the market a sufficient value of tops, reduced to clean content, to equal the value of wool in inventory on a clean content basis. Thus the manufacturer instanced above, if his inventory decreased to 90,000 lb., would cover by buying in a suitable amount against his previous sale. Similarly, if his inventory increases by 10,000 lb., he sells more futures. When the delivery date on a contract is near the manufacturer transfers his hedge into another future month and this process continues.

Perfect Hedge Is Rarity

Theoretically, with a perfect hedge the manufacturer or wool dealer, makes or loses on the futures market exactly the amount his inventory depreciates or appreciates; the commissions paid on placing the futures contracts being regarded as the price of the insurance. Actually this is not a perfect world and futures dealings are no exception.

One of the first questions the manufacturer or dealer will consider is in what month he will place his contract; that is, will he sell August, September, or October? As a general rule future months will command a premium over nearby months equal to the carrying charges, but there is a variation according to market views. Since each time a contract is transferred a commission must be paid, the best general rule is to place the contract as far ahead as possible in a month which does not command more than the average, or carrying charge, premium.

Admitting that a "perfect" hedge is well nigh impossible it follows that the figures will not balance as they should theoretically and there will be pluses or minuses from time to time; *but*—these pluses and minuses will be far less than the pluses and minuses caused by fluctuating raw material on an unhedged inventory.

A factor of variation is also evident in the relation between the price for various grades of wool and the price of the standard. In cotton the difference is called the basis, grades other than the standard being quoted as so many points "on" or "off" the price of the standard ⅞ in. middling cotton. Laws of supply and demand operate for the various staples and grades, and the basis varies from time to time. This variation in the basis has led many cotton manufacturers to conclude that they cannot hedge on the cotton market. However, many

cotton manufacturers found that if they used their ordinary market judgment about the basis they could make a pretty good hedge. Even without an exchange the manufacturer using, say, 1⅛ in. strict middling, looks over the market and decides he will buy now because this grade looks cheap in relation to the rest of the market, or decides to postpone purchasing because the particular grade is somewhat above what he thinks it should be. Application of this same market sense can guide him in making a hedge.

Spread Between Wool and Tops

A similar situation will develop in wools. The price of 64s tops today being 85c and the price of Montana ¼ blood 43c, the difference is 42c. As a general rule it may be said that this relationship will be maintained, but there will be fluctuations due to the operation of the law of supply and demand in the different individual grades. The manufacturer must watch these fluctuations anyway, if he is to purchase soundly, and he can apply this same judgment in his hedging. Thus, if the manufacturer thinks that the difference will be only 41c. next October he will hedge less of his inventory because his loss in inventory on a falling market will be less.

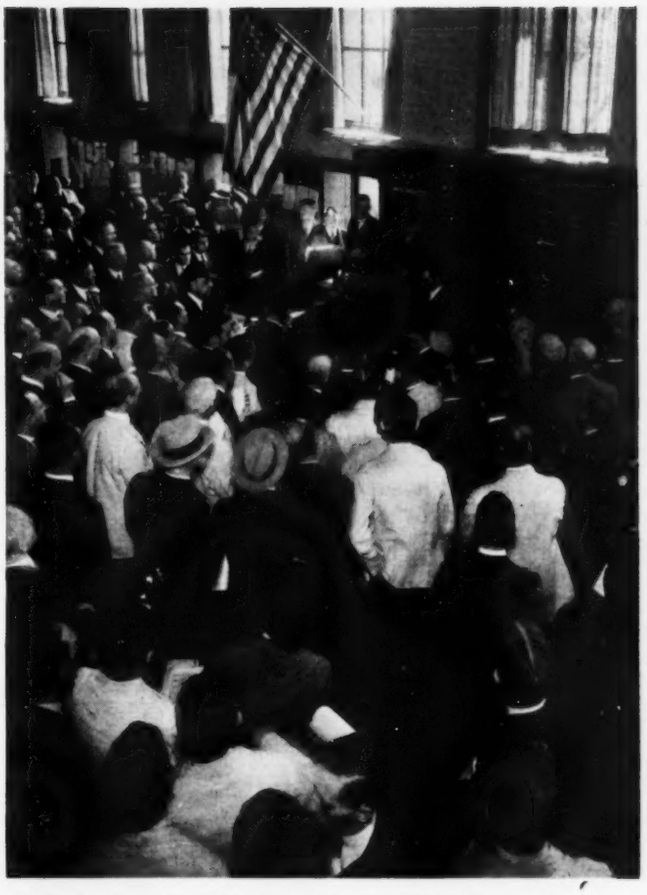
Nothing can take the place of horse sense in figuring such variations, but no greater amount of horse sense is needed than in open market operations. As the manufacturer becomes familiar with the working of the future exchange he will become more adept in dealing with premiums for future months and with the relation between the price of the grade of wool he is buying and the standard, but even without being an expert he can have less pluses or minuses than would result from being wide open on the market. In addition, the manufacturer will find that the firms which handle transactions on the exchange will be ready with technical advice and figures to assist the manufacturer in taking the proper steps.

A strict policy of hedging is pursued by manufacturers who desire to divorce their business as far as it is possible from raw material speculation, and who wish to depend entirely on manufacturing profits. Many manufacturers, however, believe that they should take advantage of market conditions when prices are below normal and buy ahead with the idea of securing an additional profit through appreciation in value. A commodity exchange offers facilities to such men also.

Not Necessarily Speculation

There is still a tendency to regard any operations on a futures market as speculation. If the manufacturer buys wool and puts it in a storehouse or buys for future delivery, and the price goes up, he is hailed as a shrewd business man. If the market goes down, sympathy is extended to him for tough luck. If, however, the manufacturer buys a future contract and the market goes up, he is a "speculator." If the market goes down, he is a "sucker." As a matter of fact, however, dealing on a future exchange can be far safer than actually buying raw material.

A manufacturer who buys wool over and above his immediate needs and puts it in a store-house, or who contracts for future delivery, is definitely tied down. He thinks the market is going up or he would not act as he does, but if he changes his mind in two weeks about the market it is just too bad; he has no way of changing his commitments. If, however, instead of buying actual wool he buys a future contract on the exchange, he is in a position where he can get out at any time if anything turns up which leads him to believe that the market is not going the way he thought it was. In such a case he can sell on the exchange to cancel his original purchase.



View in the new Wool Top Futures Exchange, conducted by the Wool Associates of the New York Cotton Exchange, at the opening last Monday morning. The first transaction was a sale by Joseph A. Wade of J. A. Wade & Co. to J. Victor di Zerega of a contract for September delivery at 74.30c. This was followed by another sale of September at 74.20, after which sales were made on other deliveries from October to April at prices ranging from 74.20 for December and January to 74.30 for October and 74.40 for November, December, February, March, and April. All of these sales were made on the opening call which was conducted by the secretary of the exchange, Frederick F. Kuhlmann. Preceding the opening of the exchange, there was a brief ceremony at which the speakers were Philip B. Weld, president, and Joseph R. Walker, second vice-president of the Wool Associates. Mr. Weld referred to the steps taken by the Cotton Exchange in organizing the Wool Top Exchange and expressed appreciation for the services rendered by Eugene Schwerdt, wool merchant of Boston, Julius B. Baer, technical and legal advisor, Frederick F. Kuhlmann, secretary, and W. Brewster Southworth, assistant secretary.

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A commodity exchange, then, offers two opportunities to the manufacturer, or to anyone who carries stocks of the raw material. A strict policy of hedging can be pursued, or a more flexible method of taking advantage of market conditions can be worked out. The subject is not as simple as A B C, but it is not so complicated as might appear on the surface. The average manufacturer can benefit by an exchange if he uses his ordinary talent and secures advice from the firm which handles his account on any technical questions. A perfect hedge may not be possible but fluctuations can be minimized, and it is probable that errors due to variations in premiums and differences will average out in the long run.

Another obvious use of the exchange is where the

manufacturer takes an order from a customer for future delivery, and, for one reason or another, does not desire to pick up the wool to cover at once. By buying on the exchange and then taking up the futures contract when he actually buys the wool he is protected against price fluctuation in raw wool. Incidentally, this operation illustrates one of the pitfalls to be avoided in dealing on a futures exchange. As long as the manufacturer actually takes up his futures contract when he buys the wool in the above case he is all right, but on a falling market there is an urge not to do so.

To use a specific example, the manufacturer sells goods to a customer for October delivery which will require 20,000 lb. of clean content wool. He does not want to buy the actual wool at this time so he buys a futures contract. By August, when he picks up the actual wool, prices have slid off 3c and if he takes up his futures contract he shows an equivalent loss of $600. He makes up this 3c per lb., however, because he buys his actual wool at 3c less than the basis on which he accepted the customer's order. The psychological difficulty lies in the fact that the $600 he loses on the exchange shows up very clearly on his books, while the $600 he makes by purchasing his wool on a lower basis does not show up clearly but is buried in the manufacturing account. Under such circumstances there is a great temptation to hang on to the futures contract in the hope that the market will turn and that the $600 will be made up. Which, of course, defeats the purpose of using the futures market for protection and some losses have been accumulated because the hoped for change did not come.

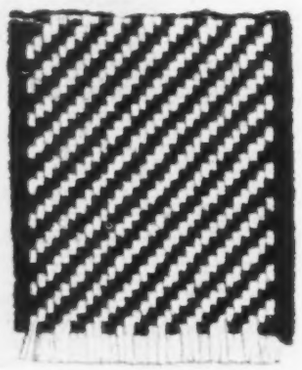
There is a certain something about trading on a future market which inclines a man to take chances which he would not take in the ordinary course of his business and this inclination must be avoided. In the long run the manufacturer will be better off if he uses the exchange as a means of protection by hedging. If he wishes to gamble a bit on raw material the exchange offers a flexible means of doing so, but the gamble should not be any greater than he would take, and has taken in the past, in buying actual wool. If he wishes to go any further, it is usually just too bad.

A New Worsted Fabric from France

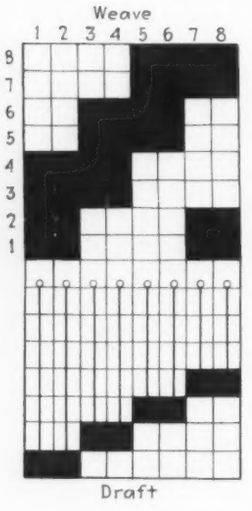
By Lillian Edgerton

Research Counselor
New York

AN interesting new version of worsted from France has very recently been received in this country. It is a light-weight fabric in a fine twill weave, and will undoubtedly prove to be a good seller in the fall. This material will appeal to those who are fashion-wise and alert to fashion demands, for it offers many interesting possibilities: first, to the American wool manufacturer as a model for copying; second, to those in the garment trade who specialize in the making of suits and coats; and third, to the buyer of piece goods in the high-class department store.



High-class worsted suitings and coatings. About 10-oz. weight. Basket twill



White warp, 2/28s worsted.
Black filling, 2/28s worsted.
44 ends per inch.
44 picks per inch.
Set 62 in. in reed to finish 54 in.
Clear-finish type.
4/4 twill weave or 2/2 basket twill.
Analysis by Carl C. Mattmann, Jr.

It is decidedly a high-grade product, and in the retail store would be placed among the quality fabrics. It is woven of a very excellent quality of yarn and is 54 in. wide. Moreover, it is exceedingly well constructed, as may be seen in the accompanying graph and illustration, which show the weave in detail. Fine lines, which are lighter in color than the body of the fabric, form a pattern which is very clean-cut and even, a feature which is not often found in a material of this weight. The resulting design will be very attractive to the discriminating consumer. The color combinations, black and white, brown and tan, and green and white, are much in demand and will continue in favor for some time to come.

Owing to the increasing interest manifested by women of fashion for soft, light, wool fabrics, this example should have a wide popularity. Also the material is so supple that it will lend itself to the finest sort of tailoring, with the intricate seamings which have become so fashionable. Self trimmings could be most effectively worked out because of the very distinct diagonal lines. It is a material particularly appropriate for a number of styles—the tailored suit of the town and country type, the separate sport or light travel coat, that important extra skirt to wear with one of the new sweaters or a coat in a plain color, or a three-piece ensemble consisting of a suit and top coat. As a suggestion for fall wear, this fabric could be very attractively combined with fur. One of the flat monotone furs should be selected, however, because a lustrous surface will better emphasize the pattern of the weave. Another smart combination could be worked out by using the material for a lining to a light-weight fur coat and also for a skirt which could be worn with a crepe blouse or a very light sweater as a between-season ensemble.

After carefully inspecting this fabric and comparing it with others of a similar nature, it seems to present excellent promotional possibilities from the point of view of style and desirability. It is smart and new for the moment, and yet it has a prestige and distinction that may carry it through more than the current season without becoming demode. It can be featured for the fall season, later for the resort fashions, and again it will be entirely suitable for the spring showings.

"National Cotton Week"

Viewed as Aid to All Textiles

THE idea of "National Cotton Week" has caught on. The spontaneity of its acceptance throughout the country has surprised even its most ardent proponents. State governments, municipalities, organizations and individuals — manufacturers, wholesalers and retailers, have endorsed the plan and taken steps to cooperate in this movement set for the first week in June.

Naturally, its primary function is to aid the cotton industry in all its branches. It is also believed that general business will be stimulated thereby. However, there is another consideration of specific interest to all textile manufacturers and distributors. There can be no major buying impetus in one type of textiles without a corollary stimulus to all other types.

This phase far outweighs the element of competition between two fabrics for the same use. If a woman is impelled to buy a cotton dress or two, the chances are good that she will also invest in some stockings to go with these dresses, possibly a sweater or a cloak to complete the costume. The same applies to a man. Speaking personally, we know that we seldom acquire a new suit, for example, without becoming still more extravagant and adding a new hat to our wardrobe.

Far more important than any competition among different types of textiles is the competition which textiles have experienced from other products. Any move which will enable the industry to secure more of the consumer's dollar is a sound one.

Consequently it is not too much to expect benefits accruing to the textile industry as a whole from "National Cotton Week." At any rate, it is a progressive move which should be hailed—and is being hailed—as another sign of life in a branch of manufacture which has been variously termed decadent, dormant, backward.

A complete roster of the various organizations and communities which are cooperating would resemble a directory. Consequently it is possible to cite only a few as typical of hundreds of others.

The National Association of Cotton Manufacturers, through President Ward Thoron, has appointed a cooperating committee composed of Allyn B. McIntire, of Pepperell Mfg. Co., chairman; Irving Brown, Nashua Mfg. Co.; Clinton B. Tooley, Pequot Mills; F. S. Blanchard, Pacific Mills; D. F. Horne, Wamsutta Mills, and Mr. Thoron.

The American Cotton Manufacturers Association, under the leadership of Cason J. Callaway, president, and W. M. McLaurine, secretary, has called upon its members to make every effort to have their local stores and newspapers accord "National Cotton Week" the fullest support.

Enthusiastic endorsement was voted at a special meeting of the directors of the Cotton Manufacturers Association of Georgia, and a committee, composed of Fuller E. Callaway, Jr., of Callaway Mills, W. D. Anderson, Jr., of Bibb Mfg. Co., and T. M. Forbes, secretary of the association, was appointed to utilize funds voted by the directors, toward creating a statewide interest in "National Cotton Week."

From such varied organizations as the Cotton Yarn Merchants Association, American Cotton Shippers Association, Independent Grocers Alliance of America, National Retail Dry Goods Association, Wholesale Dry Goods Institute, and the New York Cotton Exchange, have come prompt assurances of endorsement and support.

The movement promises to extend even beyond the week itself. Walter C. Taylor, secretary of the Southern Textile Association, has announced that the annual convention of that organization, to be held at Isle of Palms, Charleston, S. C., June 12-13, will be a "Wear More Cotton" meeting. On Friday evening, June 12, a cotton ball will be held, with prizes for the best cotton costume.

Acme Photo

Mannequins wearing some of the new cotton fashions specially evolved for the English "National Cotton Week" held early in April. This event had aims similar to the American week now in prospect.

Similarly, the governors of States have endorsed the idea. Among expressions received by George A. Sloan, president of The Cotton-Textile Institute, which is heading up the movement, has come word from Gov. Wm. Tudor Gardiner of Maine, Gov. Harvey Parnell of Arkansas and Gov. Theo. G. Bilbo of Mississippi. In addition, Gov. L. G. Hardman of Georgia has issued a proclamation officially designating the week beginning June 1 as "National Cotton Week" in that State.

Typical of the support from municipalities may be mentioned the ambitious "Wear More Cotton" Festival this week at Augusta, Ga.; the Cotton Festival at

(Continued on page 56)

Elimination of Variables Is Urgent in Dyeing Chain Warps

By Herbert C. Roberts

COTTON yarn which is to be dyed for warps for ginghams, flannelettes, chambrays, blankets, etc., can be handled conveniently and economically in chain form. This method of dyeing is feasible for nearly all kinds of warps, with the possible exception of those dyed with some of the vat and naphthol colors. It is particularly desirable when batches varying in weight from 200 to 2,000 lb. are to be dyed in one shade.

The steps of the process are as follows: (1) ball warping; (2) boiling-out; (3) doubling; (4) bleaching or dyeing; (5) splitting; (6) drying; and (7) beaming.

In ball warping, spools containing the individual strands are mounted in a "V" creel. From this creel the yarn is wound on a beam. From the beam the strands are bunched together like strands of a rope. Next they are wound on a shell to form a ball warp. The length of the ball warp will run from 5,000 to 10,000 yd.

Boiling-Out

Boiling-out can be performed in a two-compartment machine. The first compartment contains the boiling-out materials, and the second holds the wash water. Between the two compartments, heavy squeeze rolls of rubber provide a means of removing surplus materials and returning them to the boil-out box. Caustic soda and some wetting-out or penetrating agent are used in the boil-out bath. The initial charge of these materials is about 1 lb. of caustic soda and 4 oz. of penetrant for each 20 gal. of water. Stock solutions of these agents are kept on hand at all times; and as the goods are run through the bath, additional quantities are fed in. The boiling-out must be effectual in a short time, since the warps run through the bath at the rate of 30 to 40 yd. per min. The principal reason for using a wetting-out agent is to speed up the action of the caustic soda.

The guide rolls in the bottom of the machine should be fastened in such a way that they can be hoisted out of the machine, should the work become tangled, or a roll become broken. Live steam is generally used as a source of heat, as it brings the bath up to a boil quicker, and there is no danger of diluting the bath to a point where it will boil over, because the goods are carrying water out of the bath in a continuous stream. A constant stream of running water enters the rinse bath and causes a steady overflow. A serpentine winder is usually placed at the entrance of the boil-out box. This wraps a cord about the warp, adding strength to the warp and preventing the ends from becoming caught about the rollers, should one of them happen to break.

The average boiling-out box will accommodate from 24 to 30 warps running side by side. For the sake of economy and high production, the box should be filled to capacity at all times.

The warps, when ready for boiling-out, are brought to the rear of the boil-out box. The end is threaded through pot-eyes and is separated from other warps in the lot by rail pins. The box is charged with one-half the necessary amount of caustic soda and penetrating agent. The balance of these materials is kept in a storage tank to be fed into the box at regular intervals. From the boiling-out compartment the warps pass through heavy rubber squeeze rolls into the cold running rinse water, and thence through another set of squeeze rolls, pot-eyes, and rail pins into trucks or boxes.

Doubling Operation

The next operation is known as the doubling operation. All the warps going into the same shade are put in the same box and the ends are brought to the top of the box. When one-half of the warps have passed into the delivery box, as indicated by a measuring device attached to the squeeze rolls, the delivery boxes are replaced by others. The middle of the warp is kept at the top of the box. When the entire warp has passed through, the two ends and middle are brought together. This gives a warp having four times the thickness and one-fourth the length of the ball warp. During the doubling operation, tension must be applied to the warps to insure a tight warp with no slack loops. Another serpentine winder is placed at the doubling machine to bind the four thicknesses of warp together.

Dyeing Procedure

Dyeing is usually carried out in a Scotch dye tub or a square box of similar design. The machine requires two operators, one at each end of side. One operator stands on the side of the machine where the warp enters and feeds on the dye solution as needed. The second operator makes sure that there are no tangles in the work, and plaits the dyed warp into the delivery box. The tubs are generally operated at a speed to deliver 25 to 30 yards of dyed warps per minute.

It will greatly assist the work of the dyer if the size of lots is kept as nearly uniform as possible at all times. For instance, if the size of lots is kept at 1,000 lb., there is a better opportunity to match shades and keep them even. The volume of water in the machine must, of necessity, be kept at the same level, no matter whether two or four warps are running through the machine. It will require far less dye in proportion to dye 2,000 lb.; that is to say, 40 warps running through the machine

at one time, than it will to dye 100 lb., or one warp. In addition, better exhaustion of the dyestuff is obtained when the machines are full, since the proportion of water to yarn is smaller.

To insure even dyeing by this method, the speed of the machine and the temperature of the bath must be kept constant, the color must be fed in at a uniform rate, and rolls must be adjusted to give an even squeeze.

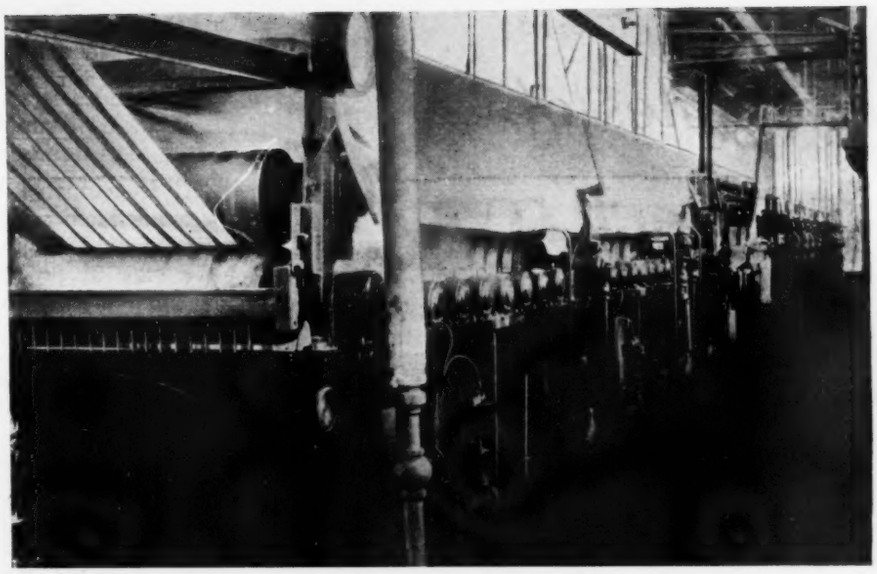
A wetting-out agent, such as sulfonated castor oil, often is used in the dyebath when dyeing dark shades. This is usually dissolved with the dyestuff, and fed into the machine at the same time the dye is added.

For many shades, three passes of the warp through the dyebath is sufficient. Some dyers feed the color into the dyebath in a slow stream corresponding to the rate at which the warp passes through the machine; others prefer to add the dyestuff in two portions. In the latter case one-half of the color is put into the kettle before the warp is started through the machine, and after the last end has passed through the machine, the direction of motion of the machine is reversed and the second portion of dyestuff is added. The warp is then given a third run through the bath with no further addition of color. Occasionally salt is added at the beginning of the third run.

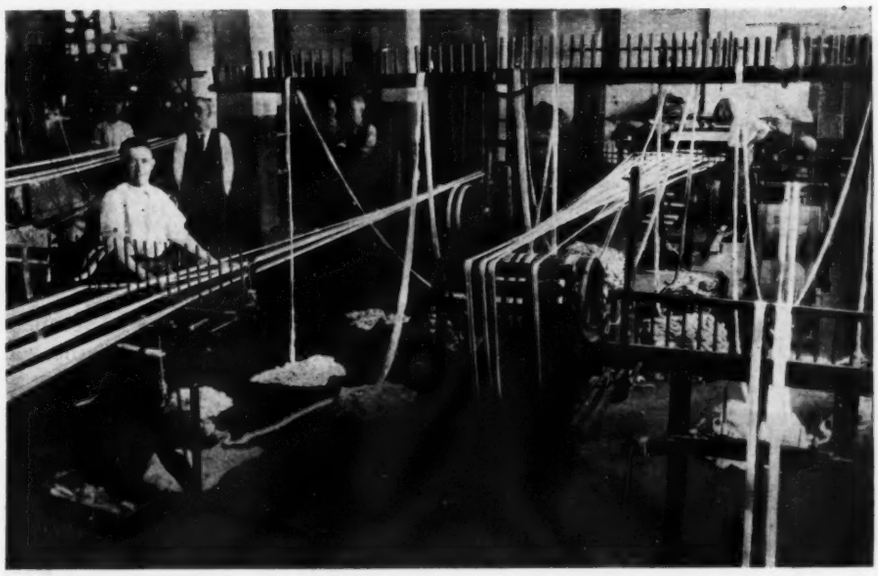
When the color is fed into the machine at intervals as the warp passes through the machine, the warps are given two or three runs. After the first run, they are practically of an even shade, but the bath is not completely exhausted and the additional run serves to exhaust the dyebath and make certain a uniform dyeing.

After dyeing, follows the splitting operation, which is the reverse of doubling. The binding thread is now unwound, and the warp is brought back to a single thickness so that it can be dried.

Warps made of fine yarn and going into tightly woven fabrics are dried immediately after splitting. Dry cans consisting of two stacks of seven cans each are usually employed. Each warp is wrapped about the can from ten to eleven times; and with the cans running 15 to 20 yd. per minute, the warp will be thoroughly dry when it comes off the last can. It is advantageous to have only a moderate heat on the first two or three cans. If the first two or three cans are cooler than the balance, the dyed warp is heated slowly, and there is practically no danger of marking off the colors, especially where a dark warp has been dried on the cans, and this is immediately followed by a warp of a lighter color. When the cans become soiled, it is only necessary to wash off the first two or three cans with warm water and pass a leader over these cans to clean them.



Warps leaving boil-out machine



Splitting a chain warp

When the warps are made of coarse-count yarn, such as 12s to 18s, and the fabric to be woven from these warps is not of a high sley or pickage, it is possible to size the warp before it is dried. It is not necessary that these wraps be sized on a slasher.

Dry cans approximately 96 in. wide will take care of six warps of 400 ends at one time; therefore the size box can be made wide enough to accommodate six warps. The size box usually contains two rolls at the top and three rolls at the bottom. It should be large enough to permit a 10-yd. length of warp to be constantly in the size. The warp comes out of the size box through heavy squeeze rolls and goes directly to the dry cans.

The sizing solution for sizing these warps is made up somewhat similar to the size solution used on a regular slasher. A good working formula is 25 lb. of thin-boiling starch and 5 lb. of tallow softener made up to 50 to 60 gal. of finished size. A tank of cooked size is kept hot at all times; and as the level of the size liquor goes down in the size box, it is replenished at regular intervals by adding a pail or two of fresh hot size.

Warps of finer count going into high-sley and high-pick goods must be sized on a regular slasher.

Examples of Modern Tricot Knitting

By W. E. Shinn

Associate Professor, Clemson College, S. C.

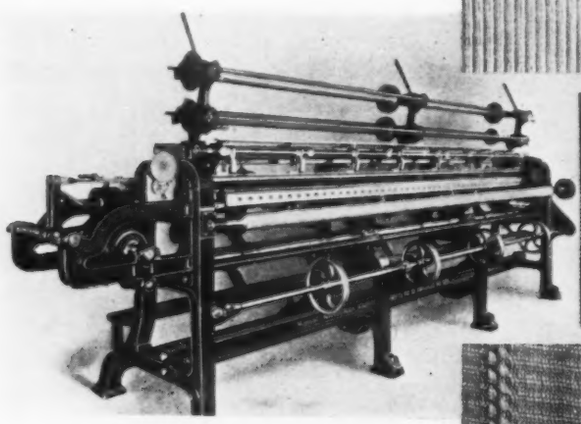


Fig. 1. Examp'e of modern warp-knitting machine

TRICOT fabric is by no means a new product. It has been used for years in the manufacture of gloves, and has thus become so closely associated with the glove trades as to be commonly referred to as glove fabric. The outstanding advantage of this kind of fabric is its non-run characteristic, which gives it a great advantage over regular-knit jersey fabrics, which are seriously damaged by the rupture of a single stitch in the fabric. Recently interest has been revived in tricot for underwear and other garments.

An American-built tricot knitting machine (Fig. 1), which has recently been improved to operate at higher speed, will serve as an example of modern tricot equipment. This machine, built by Collins Loom Works, Inc., Amsterdam, New York, is adaptable to silk, rayon, wool, and cotton, and produces fabrics ranging from nets and veilings up to overcoatings, with various weights of fabrics in between. It is built in widths ranging from 72 to 180 in., the production being naturally greater on the wider machines. In general it may be said that from 2,000 to 5,000 stitches are formed in the fabric for each stitch movement. On plain fabric a satisfactory speed for operating the machine is 176 stitch movements per minute or 22 racks per hour. This speed has been exceeded in a few cases with no harmful results. The rate of production on a 180-in. loom is therefore sometimes in excess of 50,000,000 stitches per hour or over three-quarters of a million stitches per minute. At this rate the production on a fabric having 5,000,000 stitches per square yard would be:

$$\frac{50,000,000}{5,000,000} = 10 \text{ sq.yd. per hour}$$

It is estimated that the production of a broad-silk weaving loom on goods of the same weight per square yard would be approximately four square yards per hour. The rate of production of cloth on the warp-knitting machine is therefore greater than that of a loom on woven fabric.

In some mills where medium or heavy yarns are used, the Collins machine has turned out cloth at the rate of 30 or more square yards an hour. The possibilities of patterning appear to be very wide. One cloth now being produced runs over and back 48 needles on each bar. This means that the structure may be varied over this width to form a pattern of any desired shape. The pattern is controlled by pattern wheels located at the end of the machine, each controlling a separate bar, which guides the yarn to the needles.

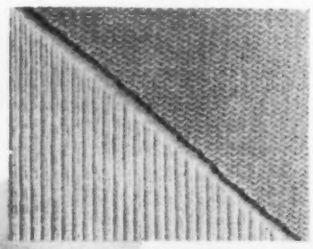


Fig. 2. Satin-faced warp-knitted fabric

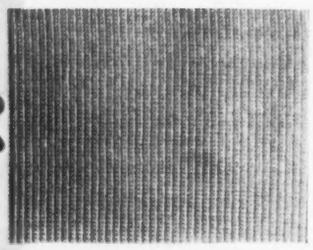


Fig. 3. Warp-knit "run-proof" underwear fabric

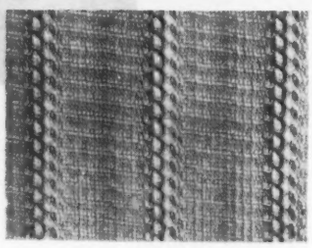
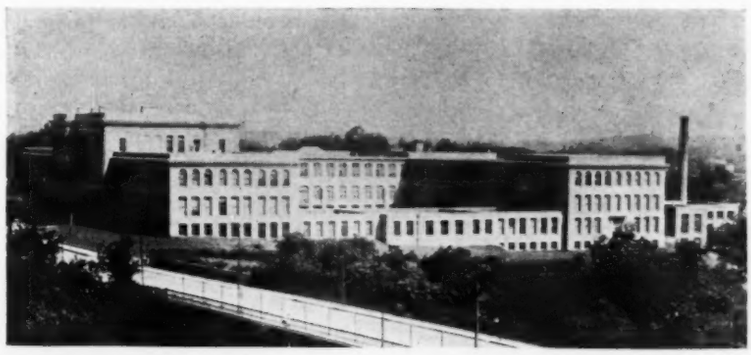


Fig. 4. Fancy Warp-knitted fabric

The bulk of material produced on the warp-knitting loom is glove silk rayon, and combination fabrics of cotton and rayon, used for the most part in the corset trade, and of silk and rayon, used in large quantities in the underwear trade. Another recent development is a single-bar fabric of rayon known as "run-proof," which is at this time having a very favorable reception in both ladies' and men's underwear. A few machines have been devoted to the production of knitted ties with satisfactory results. Several plants are running full time on fancy nettings and veilings. Fig. 2 illustrates a satin-faced warp-knit fabric which is suitable for women's suitings. The face lower left, is made of rayon over a backing of mercerized cotton, upper right. This combination with the cotton forms a fabric of considerable bulk with a fine, lustrous face, and is very attractive made up in dresses for sport and evening wear.

A view of a fine glove silk is shown at Fig. 3. The construction is approximately 25 wales and 46 stitches per inch. Fig. 4 is a fancy warp-knit fabric in which a pattern has been developed by shifting the guides in such a manner as to produce perforations in a longitudinal direction in order to develop a novelty open-work stripe. The use of a few ends of color in the warp adds a faint shadow stripe between the open-work stripes.

Lowell Textile Alumni *Meet at Institute*



Lowell Textile Institute, where alumni gathered last week for annual reunion

THREE technical sessions, devoted respectively to cotton, wool, and chemistry, featured the annual reunion of the Lowell Textile Institute alumni held on May 16 at the institute grounds in Lowell, Mass. This feature, inaugurated three years ago, has grown in importance and now attracts wide interest. Another event on the program was a ten-inning baseball game between the varsity team of the institute and the Massachusetts Agricultural College, which the former won, 7 to 6. The attendance was one of the largest ever attained by the alumni association.

Officers for the ensuing year were elected at the business meeting, which was held in the morning and was presided over by Frank L. McCool, '10, of the Sandoz Chemical Works, Inc., Providence, R. I., and president of the association. The new officers include Charles H. Forsaith, '20, superintendent of the Jackson Mills, Nashua, N. H., president; Arnold J. Midwood, '05 of Dyestuffs Corporation of America, Boston, Mass., vice-president; and Arthur A. Stewart, '00, professor of textiles in charge of the finishing department of the institute, secretary-treasurer. The following executive committee of fifteen men was elected: P. H. Warren, '05; E. B. Rich, '11; J. F. Dewey, '04; S. H. Wheelock, '05; B. W. Parsons, '20; L. S. Farr, '08; O. D. Gay, '08; E. D. Walen, '14; J. M Washburn, '21; A. E. Wells, '20; R. T. Fisher, '14; D. W. Symmes, '22; A. Campbell, '23; R. M. Sawyer, '27, and E. L. Wingate, '28.

In the discussion regarding programs for reunions, the sentiment expressed was to the effect that the banquet is an important feature and should be retained, although it was recommended that the invitations be so worded as to permit an alumnus to sign up for only the daytime activities if he so chooses. Those who expressed opinions as to the best location for the reunions favored Lowell.

Following the luncheon, President McCool conferred the "president's cup" upon the class of 1911, which had the largest percentage of its members present. In the evening this class held a dinner at the Vesper Club in Lowell, arrangements for which were in charge of Everett B. Rich, '11.

Charles H. Eames, president of Lowell Textile Institute, also addressed the alumni at this time. He informed them that the enrollment of students is being maintained in spite of adverse business conditions and described various installations of modern equipment which the institute has installed. The instructors and students, Mr. Eames said, have completed the plans for an additional story to be added to the Colonial Avenue Building, which adjoins the northeast corner of Southwick Hall. He stated that the addition to the campus recently acquired is being graded ready for use.

At the cotton technical session the alumni were addressed by Yun-Cheng Wang, of Shanghai, China, a senior. Mr. Wang described a machine for testing the luster of fabric which he has been helping to develop in his thesis work. He explained how the effect of fabric construction on the amount of luster indicated by the machine is to be eliminated by mounting the samples on a revolving drum. Mr. Wang's paper was followed by a general discussion of conditions in the cotton industry, under the direction of Kenneth B. Cook, '13, technical manager of Manville-Jenckes Co., Pawtucket, R. I., and chairman of the alumni technical committee on cotton.

In the chemical session, which was in charge of Dr. Harold W. Stiegler, '18, of Cheney Bros., South Manchester, Conn., a general discussion was held on the subject of salaries and prospects for textile chemists and colorists. This session was particularly valuable to the younger men, who learned the viewpoints of the older graduates. Prof. Louis A. Olney, of the institute, urged the alumni to employ the recent graduates, even if it proves necessary to place them in inferior positions at first, stating that these men will eventually become of great value to the concerns for which they work. It was particularly emphasized at this session that mill purchasing agents should be technically trained in order that they may intelligently discuss their problems with the chemical salesmen.

An interesting paper on modern practice in raw-stock and piece-goods carbonizing was contributed by Royal P. White, '04, agent of Stirling Mills, Lowell, Mass., at the wool session. Mr. White, it was announced, has recently been made chairman of the trustees of the institute. An excellent paper on the subject "Solvents as Detergents" was presented by George A. Messenger, of Watson Park Co., Boston, Mass. Both of these papers will be published in later issues of TEXTILE WORLD. The wool session was concluded by discussions of woolen-manufacturing technique, led by Ralph K. Hubbard, '11, president of Packard Mills, Inc., Webster, Mass. Credit for the success of the wool meeting goes largely to Stanley H. Wheelock, '05, president of Stanley Woolen Co., Uxbridge, Mass., who was in charge.

Improved Methods of Water Purification

Aid Textile Industry

By D. R. Weedon

◆ *The accompanying article, outlining present-day practice in water treatment for industrial purposes is abstracted from a paper delivered by D. R. Weedon, general sales manager, Hungerford & Terry, Inc., before a joint meeting of the junior section of the A.A.T.C.C., and the classes in chemistry and dyeing at Lowell Textile Institute, on Thursday, April 23.*

IN THE consideration of a water supply, whether for industrial or drinking purposes, the question of quantity of raw water rather than quality should be first answered. The quality can be readily changed, while the quantity, even with careful steps toward conservation, might still be insufficient. This is readily understood when it is realized that a city of 100,000 people will not use ten million gallons of water a day, as an average, while several finishing plants in New England are using from five to twenty million gallons a day.

If there is available a spring, or uncontaminated stream, or possibly if there are wells which can supply ample quantity of a satisfactory quality, a happy condition exists. In the eastern part of this country, well water is generally hard, containing salts of lime or magnesia, or both, in appreciable quantities. On the other hand, springs and surface streams contain lime and magnesia; but as a rule, not enough to be rated objectionable.

Well or spring water may also contain varying quantities of iron in solution. For years, it was not fully realized how many dye-house troubles could be traced to iron in the water. Until quite recently, it was unusual for anyone to demand water with iron reduced below 0.25 p.p.m. This figure was gradually reduced, so that today certain industries definitely require the iron content to be always less than 0.05 p.p.m.

Before leaving the subject of wells it may be well to mention that in New England wells are not nearly so reliable as in some other places. Thousands of dollars have been thrown away drilling for water where a proper study of the local earth strata would have shown such effort would necessarily prove practically fruitless.

The hardness of surface water will usually be less than wells, but the stream will ordinarily contain varying quantities of objectionable foreign substances which must be removed. In addition to lime, magnesia, and iron, the other objectionable elements are algae, color, turbidity, suspended matter of various kinds, and trade wastes of a wide range in character. For drinking-water consideration, the question of typhoid or tuberculosis bacilli arises.

In many industries, or for drinking purposes, the presence of lime and magnesia in fairly large quantities is not objectionable. Eight or ten grains per gallon of these elements do not harm drinking water, but very real trouble would arise in a dyehouse, or on the inside of a steam boiler. A wool scourer would run into very real trouble due to calcium, magnesium, and soap combinations causing stains, dye-resist spots, and other annoying conditions. Furthermore, hard water destroys soap, thus causing a definite item of operating expense.

A water can be softened to some extent by the addition of excess lime or soda, either hot or cold. The hardness, however, can not be reduced below perhaps 4 to 5 grains by such methods. If really soft water is desired, it is usual to pass the water through zeolite, which effectually removes all lime and magnesia hardness. With this method, hardness can be entirely removed from water to 0 or possibly 1 or 2 p.p.m.

Iron removal is accomplished in two or three ways. Lime can be added in proper quanties, or other processes can be so combined or introduced that iron can actually be reduced to 0.1 p.p.m. or in certain cases to less than 0.02 p.p.m.

Suspended matter will, of course, be practically eliminated by simple filtration. Any bed of reasonably fine sand of proper depth will remove the floating particles which are designated as suspended matter provided it is kept clean.

Removal of Color

The next smaller particles we term turbidity. Such particles may be as small as 1/20000 in. These extremely fine particles can pass through a sand bed, unless they are made sticky by means of proper chemicals. More finely divided particles which are actually in solution, we term color. Color will, practically speaking, pass through any filter. For those industries requiring color removal, we feed into the raw water the proper quantity of alum, which coagulates this color and forms floc. This floc or masses of color and alum can be as large as $\frac{1}{8}$ or $\frac{3}{16}$ in. This sticky floc tends to pick up particles of turbidity, suspended matter, and even iron. A proper filter bed will readily remove all this and deliver water practically, and in some cases, quite as clear as distilled water. As a maximum, only 3 grains of alum per gallon of water is required to secure this floc. All the alum should be removed by the filter so that there will remain as low as 1/20 p.p.m. or less.

The alum is introduced in dry or liquid form and by mechanical means is thoroughly mixed with the raw water at the entrance to the sedimentation basin. Only a small quantity of alum is required, sometimes as low as 1 grain per gallon of water. However, the alkalinity of the water must be such that the alum can do its work. Let us say that we want a methyl orange alkalinity of 7 p.p.m., and a pH, in the basin, of 6.4. The alum will lower the alkalinity and pH. If, therefore, the

initial alkalinitiy is 15 p.p.m. and 1 grain of alum is required for coagulation of color, the right balance would be obtained easily.

In case of slightly higher alkalinity, it would be usual to feed in a little more alum in order to obtain a proper pH value. However, if the initial alkalinity were, let us say, 100 p.p.m. it would be far cheaper and better to effect a reduction to perhaps pH 7.0 by feeding in dilute acid. The reduction of pH from 7.0 to pH 6.4 would be by means of the alum required for color coagulation. The feeding of acid, as compared to alum only, for high-alkalinity reduction has the added advantage that any alum fed into the raw water, means actually adding solids which must in turn be removed by the filter.

There is another condition to consider. For example, assume a raw water pH of 6.4 or less. By the addition of the required quantity of alum, the resultant pH might be 6.0 or lower, possibly much lower. Inasmuch as we are assuming a case where best coagulation takes place at pH 6.4, it will be necessary to raise the pH to this value by means of alkali. Alkali, usually in the form of soda ash, is fed into the raw water at the same time as the alum. Sometimes the alum and soda are mixed and fed through one chemical feeder. In many cases, the raw water variation in the course of a year is such that while alum is fed at all times, an alkali feeder works part of the year, and an acid feeder is in service at other times.

Destruction of Algae

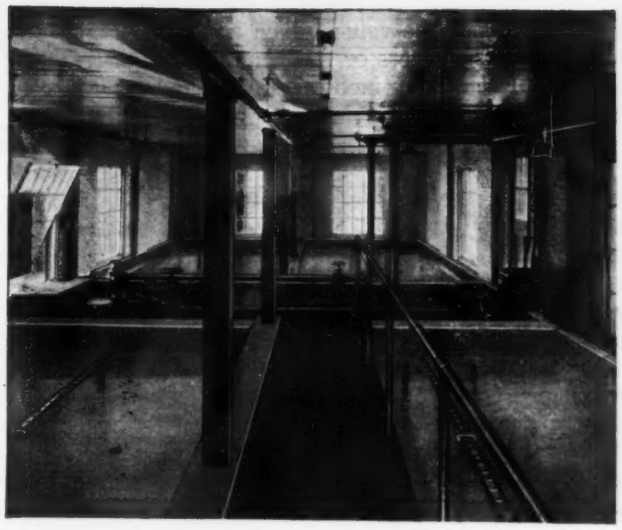
Another objectionable feature of surface water, sometimes met, is the presence of algae. Algae are more prevalent in stagnant water, such as ponds or swamps, but can appear in almost any water. A very simple method to kill algae growth is to introduce copper sulfate. In certain industries any copper sulfate residue would be troublesome. Hypochlorite can be used to good effect, and one of these elements will usually be found acceptable.

A crude but effective way to introduce algae treatment would be to trail a small bag of suitable chemical back of a boat and row or pole the boat around the pond. As the chemical dissolves, the algae will be killed. Ordinarily all required chemical treatment is by means of regular suitable chemical feeders. The proper type is selected for any given service. Periodic treatments, particularly during the summer months, may be found necessary. The question of whether the various objectionable elements appear from natural vegetable decay or surface washings, or from trade waste affects the general problem. However, each item has a definite cure.

TABLE I. ANALYSES OF RAW AND FILTERED WATER

Composition	Raw Water	Filtered Water
Temporary hardness (as $CaCO_3$) p.p.m.	12.0	10.0
Permanent hardness (as $CaCO_3$) p.p.m.	7.5	9.5
Total hardness (as $CaCO_3$) p.p.m.	19.5	19.5
Free carbon dioxide (as CO_2) p.p.m.	3.0	6.0
Iron (total) (as Fe) p.p.m.	0.55	0.01
Iron (dissolved) (as Fe) p.p.m.	0.05	0.00
Manganese (as Mn) p.p.m.	0.00	0.00
pH concentration	6.6	6.3
Turbidity	5	0
Color	12	3
Odor	None	None
Chlorides (as Cl) p.p.m.	3.0	3.0
Free chloride p.p.m.	0.0	0.0
Methyl orange alkalinity ($CaCO_3$)	12.0	10.0
Phenolpthalein Alkalinity	0.0	0.0
Reaction to methyl orange	Alkaline	Alkaline
Reaction to phenolphthalein	Acid	Acid
Suspended matter	Considerable fine	0.0
Residual alumina	.....	0.0

17.1 parts per million equals 1 grain per U. S. gal.



Water purification plant in New England textile mill

We coagulate trade-waste color almost the same as natural color. If lime is present, or if it has been added to help remove other elements, it in turn, can be removed by zeolite as before mentioned. The actual quantity of dirt, even in tremendous quantities, does not present a difficult problem.

Strangely enough, the hard problem most often is when the raw water is fairly good. In some cases we actually feed into the raw water special clay in order to facilitate the coagulation of the initial color. In order to properly and promptly coagulate the color, it is necessary to feed into the water, perhaps 1 or 2 grains of alum per gallon of water. A certain time element is desirable for many waters. Particularly if a complete color removal is required a period of two hours is allowed for the proper chemical reaction. This takes place in what is known as a sedimentation basin. This basin is properly equipped with baffles in order to obtain the greatest efficiency.

There is a chemical balance which must be maintained in the sedimentation basin. Experience has shown that the best coagulation of color occurs as a rule at approximately pH 6.4. A variation of from about pH 6.0 to pH 6.7 will include perhaps 90% of the waters in the country.

After the water has been filtered and is ready for use so far as softness and clarity are concerned, one last point should be cared for. Any water with a pH lower than the neutral point of 7.0, is of course corrosive to iron or steel. A small quantity of alkali, usually either soda ash or caustic soda, will raise the pH to 7.0 or above. Such water is only very slightly corrosive. The pH can be raised, of course, to a point where the water will not corrode iron at all. Excessive CO_2 also hastens corrosive action. The regular purification processes will reduce this materially, due to the nature of the handling of the water. When desired, free CO_2 can be reduced to zero.

In Table I is shown the results of analyses of water before and after filtering to remove iron, turbidity, color, suspended matter, etc. From the filtered water analysis will be noted the removal of suspended matter to 0, turbidity to 0, color to 5 or less, iron to 0.1 p.p.m. or less,

residual alumina to 0.02 p.p.m. or less. The reduction of these elements to the values given is of vital importance to many plants. Dyers or finishers of fine cotton goods, silk dyers, rayon manufacturers, and many others expect such water as this analysis shows, without variation.

It is a fact that there are dozens of industries which would face ruin if they tried to use in their plants, water which the owners and operatives drink with impunity. The mere fact that a drinking water is off color, or even contains more or less dirt, does not really harm it for potable use. If the suspended dirt or turbidity is strained out of a given water, and a very small quantity of chlorine is introduced to kill any bacilli of typhoid or tuberculosis, that water should be perfectly satisfactory for any one to drink.

There are five items in connection with boiler feed water which deserve early consideration. These are: scale, excessive blowdowns, foaming, corrosion, and pitting. Add to these the sulfate-carbonate ratio.

Scale can be entirely obviated by transforming the calcium and magnesium salts into sodium salts as previously suggested, by means of a zeolite softener.

Excessive blowdowns are, of course, due to the presence of dirt in some form or another in the feed water. The remedy is to feed into the boiler water containing no suspended matter, no turbidity, or very little color.

Foaming is caused by the presence of soluble solids, organic substances and probably oil. The remedy is to use a water with the soluble solid content as low as obtainable, with all vegetable or organic matter removed in so far as possible. The careful exclusion or removal of oil or grease from the raw make-up water, and from condensate returned from general plant processing is also important.

Corrosion, which affects the entire boiler interior, is due to the presence of free CO_2 or to acidity of the feed water. Free CO_2 is usually materially reduced during the filtration processes. Any remaining, can be removed by using a regulation open heater.

Pitting, which refers to the pits or scars just below the water line in the boiler proper, is due to entrained air. Any good open heater, particularly if followed by deaeration, will entirely remove air.

The question of sulfate-carbonate ratio is one which is settled by the A.S.M.E. It has to do, to some degree, with the fatigue or caustic embrittlement of steel. There is a definite ratio established by the A.S.M.E. for any given steam pressure. If the existing ratio is wrong, it merely is a question of supplying necessary correction as the case demands.

Why the Sea Is Salt . . . The present day application of an old fairy tale

By Philip M. Tucker

President, Philip M. Tucker Co., Boston

MANY years ago, in the days of giants, dwarfs and fairies, there lived a farmer in the Black Forest. There was no salt available for his cattle, except as it was brought in by itinerant merchants at a high expense and sold at exorbitant prices.

One day the farmer saved the life of one of the little people (an elf) who inhabited the Black Forest and thereby won his good will. In return for having his life saved the gnome promised the farmer to fulfill any wish he might make. The farmer scratched his head and finally said he would like a mill that would grind salt whenever he needed it for his home and his cattle.

In a few days the elf returned with a small hand mill and gave it to the farmer instructing him how to make the mill grind salt and when it had ground all he wanted, how to stop it. The farmer was delighted with the contrivance and proudly displayed it to his neighbors.

Everything went well until a dishonest rogue, who lived in the neighborhood, coveted the salt mill. One day when the farmer was away from home he stole it.

The new possessor of the salt mill returned home in high glee and told his wife what a wonderful machine he had acquired in trade with which he could grind salt whenever he wanted to. His wife did not believe that a little gadget, so small and unimpressive, could perform such a miracle. "I will show you," said the rogue.

Accordingly, he set the mill on the ground and uttered the magic word to start it grinding salt. Immediately the crank of the little mill began to turn and a stream of the whitest and purest salt imaginable flowed from its pigot.

"Wonderful," said the rogue's wife.

The mill kept on grinding and finally there was a mountain of salt filling the whole barnyard. His wife said to him—"Don't you think you had better stop the mill from grinding before we are flooded? If it keeps grinding we will have too much salt and too much salt is worse than not enough salt."

The rogue then tried to remember the magic word that would stop the mill from grinding but he could not remember what the word was. The mill kept grinding salt all that day and the next day, until finally the stream of salt pushed itself into the river that ran in front of the rogue's house. As it fell into the water the salt was dissolved and as the days and months passed the sea itself received the rushing stream and THAT IS WHY THE SEA IS SALT!

* * *

The fairy story above illustrates mankind's developing machinery to do his work—a Frankenstein which in time threatens to master the owner.

In our present machine age we have developed a productive capacity that is swamping our whole civilization—too much wheat; too much cotton; too many textiles; too much copper; too much money, and in fact too much everything. We have, in order to save human labor, created genii, robots, or whatver you call them, that threaten to overwhelm us if we do not find a method of controlling the output to a reasonable degree.

Now in the cotton textile industry we have more spindles and more looms than we need. If these were to run on the old basis of day work alone there would even then be a surplus of goods that could not be profitably used by us when we are prosperous.

The cancerous growth of night work that developed in the last ten years made the situation worse. A real attempt has been made and is being bravely carried forward to eliminate night work by women and minors in the cotton textile industry in this country. If this agreement is lived up to, a great step in properly controlling this business will be accomplished. A steadfast determination to live up to the agreement must be carried on. If we do not control unneeded output, the industry will not only revert to evil days but will probably become worse than it has ever been.

Let us, therefore, give heed to the moral of the above story and its consequences and employ sound reasoning in our production so that the machine we have built may be our servant and not our master.

Getting Worth-While Suggestions *from Employees*

By George Henry Fisher

THE employees' suggestion box should be a highly valuable tool of management. Potentially, it represents the collective training, experience, individual skill and creative genius of all the craftsmen and mechanics in the plant. It is the ideal medium of counsel and communication between men and management.

Be that as it may, the little slotted box often degenerates into a dust-covered receptacle for wise-cracks, cigar coupons, and burnt matches! The men in the shop do not seem to take it seriously. Perhaps the trouble is that the *management*, itself, does not take it seriously enough!

Businesslike suggestions and man-size ideas cannot be obtained by "babying" the employees into dropping notes into the box by offering them such bait as "cash prizes for the best suggestion received during the month of October," or something equally ridiculous. Men want to be paid for their brain power on a "value received" basis; and shop men do not differ from engineers in this respect. Valuable ideas cannot be "manufactured to meet a price" or conceived "subject to thirty-day delivery."

Mob spirit has no place in productive brain work. The men should be assured that *whenever* or *wherever* they find an opportunity for increasing the efficiency of any phase of the business, they will be fully repaid—regardless of how large or small the project may prove to be.

This business of stimulating suggestions is more a matter of understanding the employee's attitude, rather than a question of securing the proper type of advertising and ballyhoo. Propaganda, flag-waving, and appeal to the emotions are an insult to the intelligence of the shop worker, and nobody realizes the fact any more than the men themselves. If sound, workable innovations are wanted we must make an appeal of a consistent calibre.

Failing to secure the desired type of suggestions through the conventional suggestion system, many executives have concluded that, as a class, the overall-workers are not capable of expressing their ideas—if they have any! But a sincere investigation will soon disprove this theory. If the attitude of the operatives were analyzed, it would soon be shown that most of them in all classes are not only capable of offering ideas, but are anxious to do so if approached in the proper spirit.

Assure them systematic and scientific investigation of their suggestions, without bias or prejudice, and pay according to savings effected; then watch the list of worthwhile suggestions grow. The employees' suggestion idea is of utmost importance in some large plants. The writer has in mind one particular concern employing 35,000 men, which devotes a 40-man department to analyzing and installing projects suggested by the rank and file of the personnel. Hundreds of thousands of dollars are saved annually by this department. Nobody's idea is ever laughed at or belittled in this department—no matter how odd-sounding it may be. Every suggestion is given a fair chance to prove itself, and if finally rejected a courteous and encouraging letter is sent—explaining in detail the full reason for such disposition.

The outstanding lesson is that employees respond willingly to an appeal for their ideas, when assured of equitable remuneration. Also if they are made to feel that a sincere effort will be made to capitalize the idea, they will have the utmost respect for the system. The investigators should confer freely with each suggestor to obtain a clearer notion of the problem being handled. Cooperation from engineers and draftsmen should be forthcoming to any employee who needs assistance in these fields.

To insure against fraud in handling an idea of exceptional value, suggestion blanks should be of such design as to register indelibly the date and particulars of each idea presented. The blank should be perforated into two sections, each section bearing a serial number. The imprint of the date stamp should be impressed directly on top of the body of the ink-written description of the new idea. The suggestor is thus assured of his priority claim, by retaining one section of the blank (which is merely a duplicate of the other section).

If a particular suggestion is not practical in itself, but by being made public it can start constructive thinking along the same lines, the original suggestor should be well rewarded. Many valuable innovations have been projected from a kernel of an idea gleaned from someone else's rejected suggestion. Bulletin publication and careful recording of each item submitted will prove a valuable adjunct to a suggestion system.

One firm which pays "full piece-work rates" for suggestions keeps a constant reminder to its employees of their opportunities for making side-money, by posting signs at all time clocks, which read: "There are 1500 efficiency engineers in this plant"!—1500 being the total number of employees. These men are made to feel that contributing ideas toward the running of the plant is an important part of their work.

In installing suggestion systems, executives often make the same mistakes that management used to make while replacing men with machines, introducing piece-work and bonus systems, starting new welfare projects, etc.—inadequate or insincere explanation. A frank and open exposition of the entire purpose, will eliminate suspicion and reticence on the part of the workers, and enlist their full cooperation in suggestion box plans.

Defects in Yarns *as Disclosed by the Microscope*

Article XII *(Continued)*—"Don't Be Afraid of the Microscope" Series

By Edward R. Schwarz S.B., A.T.I.

In the first installment of this article Professor Schwarz described the use of the microscope by the textile manufacturer to study the twist conditions existing in single and plied yarns. He continues with a discussion of the value of this instrument in minimizing corkscrew and distortion.

CLOSELY associated with the question of twist is the problem of corkscrew in plied yarns. In some instances (e.g., novelty yarns) it is purposely employed, but in a far greater number of cases it is most unwelcome. It would seem scarcely necessary to point out that if a single strand of a plied yard forms a core around which the other strands twist, it will be impossible to attain anything like maximum strength in the yarn (Fig. 6c). The core will always break first, and before the other strands have sufficiently straightened to share the load to any real degree. Corkscrew may be prevented by proper attention in manufacturing the pulled yarn, providing only certain plies are being made.

Corkscrew in Plied Yarns

Some plied yarns are inherently corkscrewed, and necessarily will be weak. These should be avoided whenever possible. Some yarns will not be truly corkscrewed, and yet will be deformed and ill-shaped, again necessarily because of the number of plies involved. A moment's study with a handful of washers or disks of any sort will make this clear. It will be noted that a six-ply yarn will always be deformed and almost always partially corkscrewed. This is because of the fact that, if six cylinders are combined tangentially—with or without twist—there will always be room for just one more cylinder of the same diameter inside (Fig. 7b).

A seven-ply yarn must of necessity be corkscrewed (Fig 7c). The seventh strand will have to seek the central position and will be shorter for that reason than the surrounding yarns when twist is inserted. It will form a core and will be forced to bear the brunt of any stresses thrown upon the material, instead of sharing them equitably with the neighboring yarns.

Simply doubling yarns—without twist—will not introduce the corkscrew effect, so long as the tensions are equal. If, however, twist is inserted, the tensions remaining uniform, th corkscrew will become worse the greater the twist. There are many cases similar to the foregoing, but in most of these the core is composed of several yarns which are twisted about each other. While conditions are not by any means at their best, they are still not so bad as they might be. Study of the arrangement of yarns in plied and cabled structures becomes simple when the yarn cross-sections are studied under the microscope. Departure from the assumed cylindrical shape will be evident; conditions of corkscrew will be apparent; and their relative severity can be judged.

Carrying the same analysis in the other direction, the arrangement of single rayon filaments in the yarn can also be investigated (Fig. 8). Not only is the arrangement visible, but the number and type of filaments present can be determined. A slight change in the cross-sectional shape of the filament may make a tremendous lot of difficulty in the final fabric. Inspection of the yarn before it is woven is not difficult, and should be undertaken wherever troubles of this kind have occurred or are likely to occur.

Novelty Yarns

The production of novelty yarns and the construction of new types is a vital problem with many mills nowadays where it appears more economical and efficient to manufacture this material in their own plants. The stereocopic binocular microscope may be used to produce photomicrographs which, when properly mounted, will appear in three dimensions as seen through a stereoscope (Fig. 9). If a microscope of this sort is not available, the special yarn mount devised by the author (Manufactured by Bausch & Lomb and described in Art. XI; Jan. 24, 1931) will enable the worker to take stereoscopic photomicrographs with the ordinary microscope. Whatever the method employed, the results will show much of value whether it be the exact conditions of fibrous surface or the binding and structure employed in special yarns. The author many times has had to examine numerous types of yarns varying from silk strands of only a few filaments, through cotton, linen, jute, wool,

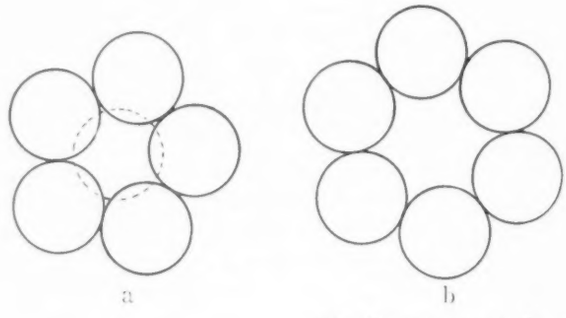


Fig. 7. Theoretical struc-

*Article I, "Possibilities of Microscope in Textile Industry," April 27, 1929; Article II, "Types of Microscope Applicable to Textile Industry," May 18; Article III, "Handling the Microscope with Efficiency and Understanding," June 22 and June 29; Article IV, "Methods of Illumination," Aug. 17; Article V, "Useful Accessory Equipment," Sept. 21; Article VI, "Textile Micrometry," Oct. 26; Article VII, "Mounting Textile Specimens," Dec. 14 and Dec. 21, 1929; Article VIII, "Preparing Cross-Sections of Textiles," Jan. 18 and Feb. 15, 1930; Article IX, "Recording Data," May 24 and May 31; Article X, "Photomicrographic Apparatus," Aug. 16 and Aug. 23; Article XI, "Photomicrographic Technique," Dec. 20, 1930, Jan. 24 and Feb. 28, 1931; "Microanalysis of Yarns," Apr. 18.

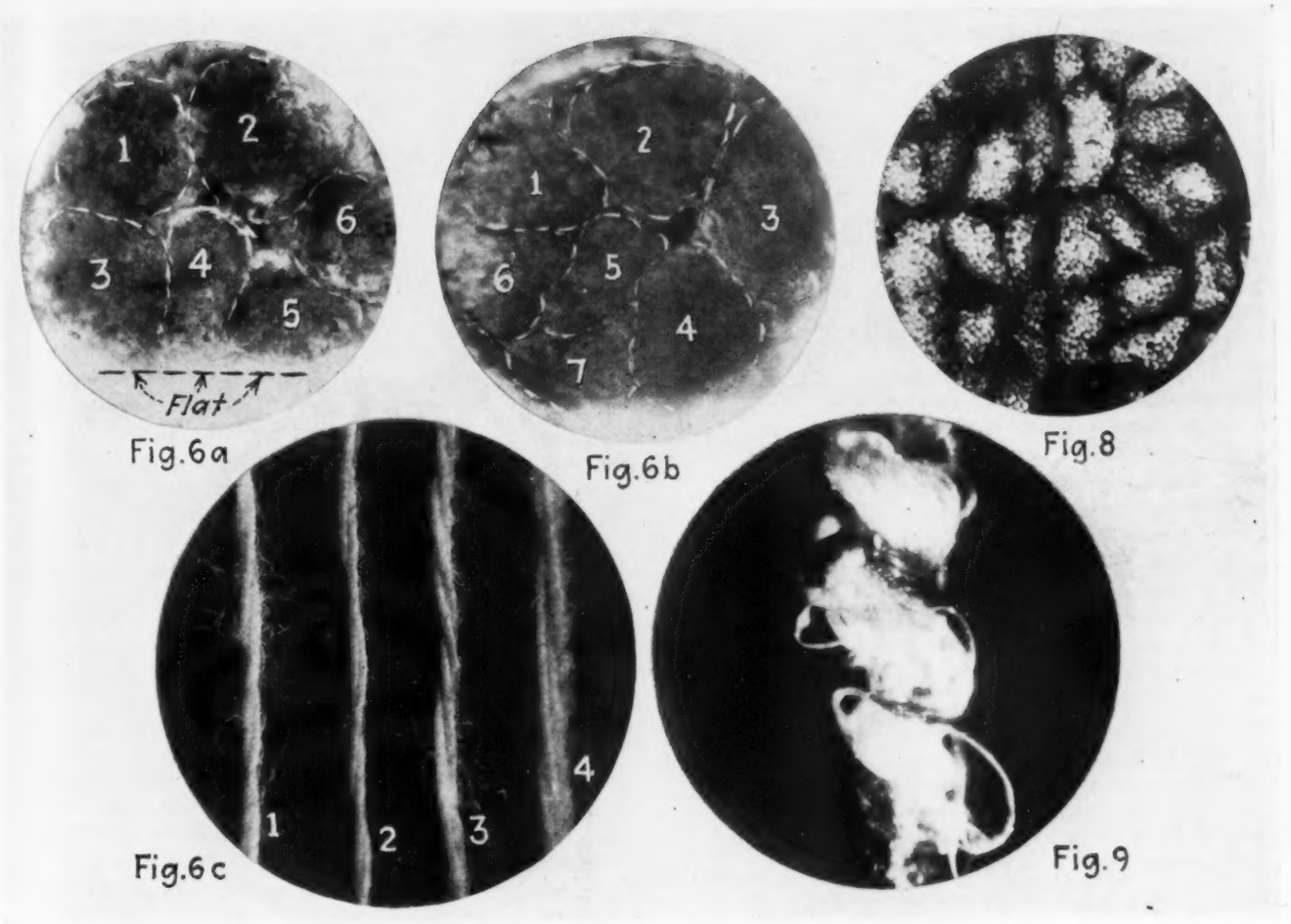
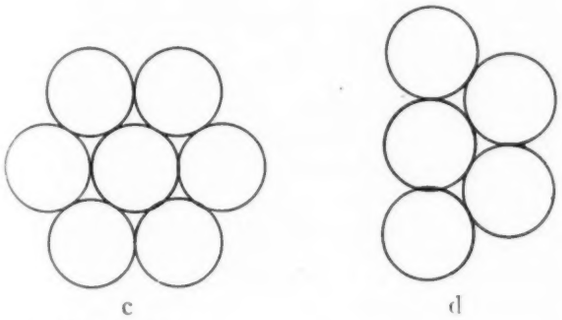


Fig. 6a and 6b. Actual structure of six-ply and seven-ply cotton yarns. Fig. 6c. Corkscrewed yarns: 1, no corkscrew; 2, one about one; 3, two about one; 4, two about two. Fig. 8. Rayon yarns in cross-section. Fig. 9. Novelty yarn structure (note corkscrew)

camel's-hair, mohair, unions, shoddy, melange, plied, core, tennis-racquet strings, shoe-strings, etc.

The factor k is of further value in yarn analysis than simply for purposes of substitution in the formula for twist per inch (page 53, April 18, 1931, issue). It can be used to express the degree of deformation or of compactness in a plied yarn. To understand what is meant by this, it will be well to study for a moment the internal structure of plied yarns as revealed by the microscope. Beginning with a two-ply construction, it will at once be evident that the dimension measured and recorded as the yarn diameter is in fact the diameter of a circle circumscribed about the yarn (Fig. 10). For the purpose of the discussion which follows, it is necessary and justifiable to assume the single yarns are circular in cross-section and tangent to each other. They quite evidently do not twist about axes through points on the circumference of the circumscribed circle, and do twist about their own centers of gravity. The angle already measured is the angle which this center line forms with the axis of the plied yarn. Examination of Fig. 10 will make plain that the distance from one axis to the other is equal to two radii, or to half the diameter of the circumscribed circle. Thus the ratio of the actual helix diameter to the plied yarn diameter is $\frac{1}{2}$ or 0.50. Similarly, the author has worked out by rigid mathematical analysis the value of this ratio, which, by this time, the reader has recognized as k, for all values of ply up to and including 50. (High-plied constructions are used in netting-cords, belting yarns, etc.) It is, then, simply a fraction which, when multiplied into the measured diameter of the plied yarn, gives the helix diameter for the twist formula.



c d

ture of plied yarns

Several writers have quoted this formula without the inclusion of k and many workers have become discouraged with micro-twist determinations because they were unable to get values which agreed with the results obtained on twist counters of the ordinary type. The uncorrected formula will give answers just one-half of the true values for two-ply yarn. One other reason why even these results will not check with the results ordinarily obtained in mechanical-twist analysis is due to the fact that the computed twist is the twist existing in the single yarn as it is in the plied condition, and must be corrected further to give the twist as it was before plying. The conditions of twist as they exist in the finished prod-

uct are very important because of their effect upon the physical properties of the yarn, and its ultimate usefulness.

Cause of Distortion

Table I (Apr. 18, 1931) gives the values of k for a wide range of plies and also gives the theoretical structure. Single yarns can be combined up to the number of five without the possibility of there being room enough within their compass for even a single core yarn. There is space enough, however, for one of the five to move in somewhat toward the center of the plied yarn; and if the twist is fairly high in the singles, the resulting yarn will not be smooth surfaced, but will carry a groove or flattening due to distortion (Fig. 7d).

Conditions in a six-ply yarn will be even worse, since there is just enough space for one of the strands to move in and to occupy the central position. It is not conceivable that this will not happen, since all the strands are under tension during the twisting operation (Figs. 6a and 7b). A six-ply yarn, therefore, is inherently poor because of its naturally distorted condition. The seven-ply construction, while symmetrical, is still wholly undesirable in most cases because of its corded condition (Figs. 6b and 7c).

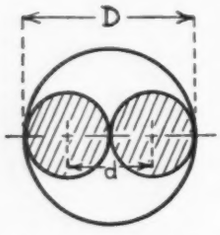


Fig. 10. Diagrammatic view of two-ply yarn

Other plied yarns are subject to the same fault, as will be seen by examination of Table I. These constructions should be avoided. It is true that as the number of plies increases there will be a larger and larger number of yarns forming the core. These will be twisted about each other to some degree, thus attaining a certain ability to stretch as the loads are applied in service; nevertheless the cored condition still exists. Imagine, if you will, a tire cord made up of fifteen plies combined in one twisting. There would be eleven yarns tangent to each other forming the outer surface and enclosing a core made up of four yarns. Thus we really have an eleven-ply yarn surrounding a four-ply yarn of low twist.

Experiments with fifteen disks or washers will also show that a circular yarn is almost impossible to achieve without considerable distortion of the singles. Compare this undesirable condition with the cabled structure consisting, as before, of fifteen strands; but combined in such a way as to entirely avoid this trouble. Five yarns are combined to make a five-ply which cannot be seriously cored, and three of these resulting yarns are combined, in turn, to make the final cord (Fig. 11). This cannot by any stretch of the imagination be cored save by very poor tensioning during the final twisting operation. Supposing that a corkscrewed yarn were thus produced —as unfortunately sometimes happens—even then, the core would be a five-plied yarn of reasonable twist and strength, rather than a weak four-ply.

Yarn Structure

Analysis of structure will be enlightening if the reader will follow through Table I and note the plies which have a single yarn forming the central core. Thus

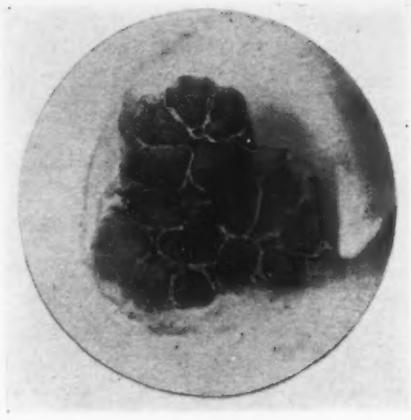


Fig. 11. Cross-section of 3/5/23s tire cord

7, 8, 9, 20, 21, 22, 23, 24, 25, 40, 42, 43, 46, 48, 49, and 50 plies are undesirable. Also it will be seen that serious distortion will result in 6, 12, 15, 16, 18, 19, 26, 27, 28, 31, 33, 34, 37, 38, 39, 41, and 44-plied yarns. The fact that as the number of plies increases, the constant k increases, leads one to suspect that, if there were an infinite number of plies, each would be so infinitesimal in size that the difference between the helix diameter and the ply diameter would vanish, and k would become unity. Actually we do not have anything like an infinite number of plies, and for ordinary single yarns of moderate counts, where the fibers may be taken as a sort of sub-single, it will be found that k has a value of less than 0.9. For rayon yarns where the filament size may be very small (Fig. 8)—as for cuprammonium—k may be computed from the relation $k = \frac{M}{M + 1}$ where M is taken from Table II, and the reference angle for this table is equal to $\frac{180}{n}$, where n is the number of filaments *in the outer ring* of the yarn structure. For other rayon yarns where the filament size may be fairly large as compared with the yarn diameter, the values of k may be read from Table I direct, the yarn being treated as a plied yarn of a ply equal to the number of filaments present.

Solving Twist Formulas

It will be equally true that, if the value of the twist per inch is known, together with the helix angle and the yarn diameter, the twist formula can be solved for the actual value of k. If this agrees with the theoretical value as given in Table I, or as found from the immediately preceding formula, the yarn may be considered perfectly proportioned. If, as is more likely to be the case, the value does not agree, then the per cent difference is a measure of the deformation or the compactness. Thus

$$\% \text{ Deformation} = \frac{k(\text{Theoretical}) - k(\text{Measured})}{k(\text{Theoretical})}(100)$$

Whenever the cross-section departs notably from circular, measurements or reasonable assumptions may be made upon which to base the location of the center of gravity of the single yarns. From this data k can be computed. This is particularly useful where the component parts form approximate sectors of a circle. The formula for locating the center of gravity of such shapes can be found in the mathematical tables in many handbooks. A simple form of computation is given for convenience: Distance along the radius to the center of gravity $= 38.1\ (r)\left(\frac{\sin B}{B}\right)$ or $38.1\ (r)\left(\frac{1}{M_B B}\right)$ where r is the radius and B is the central angle in degrees M taken from Table II for angle B.

Where the micro-method of twist analysis is to be used in routine testing of a more or less standard product, a series of tests will show what the values of k should be for the line of materials to be examined. This set of constants can then be used continuously—or at least until the product is changed purposely.

(To Be Continued)

Questions . . . *and* Answers

Finishing Paper-Maker's Felts

Technical Editor:

We should be pleased to have you advise us with reference to the cost of finishing paper-maker's felts, taking the felt from the time it comes from the loom until it is finished and ready for shipment. In other words, we should like to have an estimate of all of the expense entailed in the wet and dry finishing departments. (7544)

Paper-maker's felts are woven endless; the length and width depend on the paper machinery on which they are to be installed. After weaving, the pieces are burled and mended in the same manner as any other high-grade woolen fabric. They are fulled in the grease; that is to say, they are fulled without any previous scouring. The length of fulling time varies in various plants and also in the same plant, depending on the kind of wool oil used, the stock used, the type of fulling mill, etc. Twelve hours of fulling time is short; and in many cases, it may take from 18 to 24 hours to full paper-maker's felt in a satisfactory manner.

For proper fulling the soap is generally made up in a strength of 8 oz. to the gal. The amount of soda ash will vary between 4 and 8 oz., depending on the dirt in the stock and the nature of the wool oil used.

It will require from 1½ pint to 1 quart of the fulling solution to full 1 lb. of felt. The cost of the finishing varies in various plants. Some mills use good stock, and high-grade oils, and have a low finishing cost. Others use a cheaper grade of wool and cheaper oils, which necessitate a longer fulling time and more soap. Labor costs vary in different localities. The condition of the equipment in the wet-finishing room also affects the cost. After fulling, the pieces are scoured; this may be done without the addition of soap to the washer, or it may be necessary to add soap to build up the lather in the washer to a point where the goods will be scoured clean. This depends on the stock and the oil used. Paper-maker's felts are sheathed, but not pressed.

From this outline, it will be evident that many variables enter into the finishing of paper-maker's felts. For this reason it is impossible to state with any accuracy the cost entailed in the various operations; any figures which might be obtained in one case would be of doubtful value in estimating costs in another mill where conditions are different.

▼

Looms for Rayon Fabric

Technical Editor:

I am enclosing a sample cloth which I am interested to manufacture, and I would like to know in what type of loom it could be made and the kind of yarn used in it. (7547)

We have examined the sample and find it to be composed of 150-denier, 24-filament rayon, both for warp and filling. This construction of cloth can be woven satisfactorily on most any silk type of loom, either plain or box. The loom does not have to be of the modern type, as this cloth is being successfully woven today on looms 15 years old or more, turning out very satisfactory cloth. A weaver of reasonable skill should be able to produce this cloth without difficulty.

▼

Sleazy Appearance in Full-Fashioned Hosiery

Technical Editor:

We are enclosing herewith two full-fashioned stockings which appear to have a sleazy knit. On examining the stockings before they are dyed we do not find any trace of this trouble. A close inspection after dyeing discloses the exact shape of the dye nets used in dyeing these goods in the marks. We have not changed our system of dyeing, and we are at a loss to determine what is causing this trouble. The goods have been boiled-off and dyed in one bath, and we are using a degumming oil in the boiling off. We should like to have your opinion as to whether this trouble is occurring in the knitting or in the dyeing process. We should also be glad to have your suggestions as to overcoming this trouble. (7512)

The sample stockings show that the knitting is much too loose for the size of the thread; a tighter stitch is what is most needed. The nets in which the stockings are dyed did not cause the appearance of the knitting; but only emphasized the defect. Yet, while the dyer cannot be blamed for this fault which is troubling many hosiery mills at the present time, he can cover up the defect to some extent; and if he has the coöperation of the boarders, often can so improve the appearance of hosiery which is characterized by sleazy knitting, distorted stitches, or loose courses, that is can be made presentable.

Another cause of the defect which occurs in these stockings is that they were boarded on narrow boards. The narrow boards which are quite proper for circular-knit hosiery are quite inadequate for full-fashioned goods. If you will use boards about 1 in. wider, some of the slack loops will be stretched out, and the sleaziness will be less noticeable. Sleaziness will appear worse when the length of the stockings is above normal. With the same number of courses and loops of the proper tension, the length of the stockings should be always the same. In this sample the length is about 4 in. longer than usual.

We are returning the samples. One of these, which has been refinished and re-boarded, is considerably better in appearance than when received.

▼

Neps in Worsted Sliver

Technical Editor:

We are sending you three samples of worsted sliver (⅛ in.). No. 1 is card sliver, No. 2 is the same sliver after backwashing, and No. 3 is the same sliver after the first operation of gilling.

You will notice that the card sliver has very few nibs in it, but after backwashing the number and size of nibs increase. After the first operation of gilling the number of nibs again increases and they also seem to increase in size. Can you tell us the cause of this? (7552)

After making a careful examination of the three samples submitted, it is our opinion that the card is to blame. Examination of the neps in the gilled slivers revealed the fact that they are composed of fairly long fibers. Following this lead, an inspection of the card sliver revealed what we term a cloudy sliver. We drew staples from the card sliver, and the presence of rolled fibers in excessive number was evident. In almost every case the rolled fibers were the longer ones. It was possible to draw them out by hand, but it is our opinion that when the card sliver enters the backwasher the rolled fibers are felted a little, so that it is impossible for the fallers to open them. The neps are thus more in evidence for

two reasons: first, they have been shrunk: and second, adjacent fibers have been straightened, which producers the contrast. Naturally the intersecting gill box will increase the conditions which make the neps stand out.

There may be one or more causes contributing to the condition of the card sliver, as follows: (a) clothing in poor condition, (b) incorrect settings of workers, (c) fancy set incorrectly or not running at the proper speed, (d) the card overloaded, (e) the fancy clothing not being suitable.

In our criticism we have assumed that there is no trouble with the pins of the gill boxes or with the scoured wool. The wool is short; and if the scoured wool is lean and stringy, it would account for some of the difficulties in the carding.

Correct the conditions at the card, and we believe that the neps will be reduced to a normal number.

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Streaks in Silk Hosiery

Technical Editor:

I am inclosing two stockings showing streaks and distortions after boarding. If you will examine them under a magnifying glass, you will note that the stitches appear to have been pushed or squeezed out of line. I have found this condition increasingly worse, the heavier the silk fabric. Four- or five-thread fabrics do not show this; seven-thread shows the defect slightly; eight-thread more; and the ten- and twelve-thread very prominently. Usually by re-wetting the goods and re-boarding, the marks disappear, but I have had some that could not be removed in this way.

For degumming and dyeing, the goods are placed in muslin bags, boiled-off in rotary machines for 30 min. with 10% of olive-oil soap, boil-off bath dropped, the stocking dyed in the same machine, but in a fresh bath for one hour, rinsed twice in water at 85° F., extracted, and boarded. The stockings do not lie around in a damp condition before boarding; in fact, those enclosed were to be samples and they were immediately rushed from the dyeing machine and extractor to the boarders and boarded.

In some of the lots, I have seen the creases and distortions after the whizzing, and it always shows to a greater or lesser extent on boarding. I shall appreciate your opinion as to the cause of this defect. (7533)

From an examination of these stockings it is apparent that they were not completely degummed before dyeing. Your statement that you are using 10% of olive-oil soap and degum in 30 min. is further proof that incomplete degumming is the cause of the trouble, especially where you say that your trouble is more pronounced on heavy goods than on light-weight hosiery. It is generally accepted, that 10% of soap, reckoned on the weight of the silk, is insufficient for a good degumming. For good results you should increase the amount of soap

in the boil-off at least 50%, also you should run your heavier styles about 15 min. longer.

A small amount of sericin remaining in the hosiery will act as a sizing in spots. This will not be removed in the dyeing bath, and when the hosiery is creased tightly in the extractor, will cause permanent streaks.

If the two-bath method is used, hosiery should be well degummed before dyeing, taking care that it is not overworked in the dyeing bath and avoiding prolonged boiling in building up the shade. Avoid over-extracting, and make certain that the goods reach the boarding room in a fairly damp condition. Pull the hosiery on boards that are not too hot, thus giving the boarder a chance to stretch and press out wrinkles before the hosiery is too dry. If these precautions are observed, you should be able to eliminate the trouble you are encountering.

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Holes in Circular Stockings

Technical Editor:

Inclosed you will find two small pieces of stocking, both made on the same S. & W. model-K machine. The trouble consists of the holes which appear, as you will see, in the end of the stocking, in the looping part when the machine is finishing the last heel, and just in the front side belonging to the large-butt needles. I have changed sinkers and needles and have fixed the cylinder and carrier-ring cams without any result. Can you tell me what causes the trouble? (7561)

We find the defects in the looper's course to be drop stitches. These drop stitches are the result of faulty sinker timing. The sinkers are coming in late. The sudden lifting of the cylinder and sinkers to form the looper's course has the effect of still further retarding the sinker movement in relation to the needle movement. The result is that the yarn is allowed to escape several of the cylinder needles which may happen to be slightly out of line with the others.

We suggest that the left-hand bumper screw be moved in so that the sinker in coming in will cover the rising needle completely when the hook of the needle is in line with the under side of the sinker hook. The sinker cams should be set deep enough so that the throat of the sinker will come even with the back of the needle as the sinker is on the point of the cam.

Lack of proper tension on the needles is another possible cause of this difficulty. For machines which have been in use for some time it is necessary to put extra bend in the needle shanks to secure the proper amount of tension on the needles, otherwise they may not follow the correct path in the needle cams and thus fail to take the yarn at the throat plate. If the throat plate is worn considerably, it should be replaced by a new one; otherwise drop stitches are likely to result from the yarn being delivered to the needles at too great a distance from the needle circle.

We recommend the use of new stitch cams when the old ones are severely worn. While it is possible to grind old cams so that they will have practically the same shape as a new cam, they are always smaller and produce a needle wave which is different from that made by new cams. The result is that when the fixers set the cylinder high enough to get the necessary length of stitch, the needles will not be raised to their original height above the throat plate and the catching of the yarn by the needles at this point will be less certain.

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Cause of Shaded Hosiery

Technical Editor:

We are enclosing herewith two full-fashioned stockings, which upon close examination you will find have different color casts. These two stockings were dyed in the same bath. We are getting these results in practically every dyeing—in some baths as many as three different casts.

The stocking is made of 4-thread, 20-twist yarn. In dyeing we are right behind the knitting production; that is, there is no possibility of old merchandise in which oxidation has taken place, being mixed with new merchandise, which would cause a trouble of this kind. Legs are one day behind footers, stockings being dyed as soon as finished. There is no treatment given the silk other than 24 hours of humidification. Some needle oil is used on all machines. Gray goods are usually clean. Silk is used in the order in which it is received. We have no more than a 48-hour supply of silk on hand at any time. Different lots are not mixed by us.

The goods are degummed with 10% of Trianol S, entered at the boil, run 45 min., and flushed. The liquor is dropped. The bath is brought back to a boil, the goods are run 10 min., bath is dropped, and the goods are given a cold rinse. In dyeing, the goods are entered at a boil with 2% of sulfonated castor oil, run 20 min., salted, run 30 min., and sampled. If additions are necessary, liquor is poured from the machine to dissolve the dyestuff addition, and poured into the bath slowly with machine revolving forward. The two stockings we are mailing you were taken from the same pocket and from the same bag.

You can readily appreciate the predicament we are in; we now draw at least three samples from the bath, if they happen to be of the same cast, addition is made for them, but the entire lot will have two or three different casts anyway. If the samples taken show two or three casts, it is simply a matter of bringing at least one of them up to

sample to be matched. Understand, the condition is the same when no addition is necessary. You will also note that, although the stockings have different casts, each stocking is dyed evenly.

We have had the silk tested for twist, two different cones showing the following results in five different tests: Cone No. 1—16½, 18½, 16½, 18, 17; average, 17. Cone 2—18½, 17, 19, 17, 19; average, 18. Inasmuch as we are buying 20-twist yarn, we doubt whether this small variation will cause a different cast.

Will you kindly examine these stockings, and give us an expression of your opinion as to the probable cause of our trouble, as it is causing us no end of difficulty. (7541)

We believe that your trouble is caused by improper handling in the dyehouse. The fault may be in the mechanical methods employed or in the choice of dyestuffs and chemicals.

We shall immediately eliminate the source of supply of silk as being responsible for the trouble. Raw silk should be bought on a basis of either white or yellow, or slightly yellow, and we do not believe that any reputable silk dealer would knowingly ship one classification against the other without the knowledge and consent of the purchaser. In the event that such shipments should be made by mistake, it would be caught by any reputable throwster. Therefore we eliminate both the raw-silk dealer and throwster from any responsibility so far as this trouble is concerned. Because of your precautions in handling through the seaming room, we likewise eliminate the method of handling in the conditioning, knitting, looping, and seaming rooms.

We now come to method of handling in the dyehouse, at which point we believe the trouble can be located. While you have given much information regarding your method of dyeing, you have omitted two very important items. First, the type of dyeing machine employed; and secondly, whether or not you use dye nets. There are certain types of so-called V-pocket dyeing machines with which it has been found practically impossible to produce uniform dyeings. It is also a well-known fact that too many goods cannot be crowded into an open pocket of a machine or into dye nets, where dye nets are employed, if uniform shading is expected. Therefore we mentioned these two points before analyzing the information supplied.

We question the method of dyeing, both mechanically and chemically. We make no criticism of the dyestuffs and chemicals employed in the process of boiling-out and dyeing so far as source of supply is concerned. But we question whether or not best chemicals and dyestuffs suited for your purpose are being employed; and we recommend that you solicit information from your sources of chemicals and dyestuffs as to the products which they recommend. In the meantime, we advise the following procedure: After goods are boiled-out or degummed and given a cold rinse, let them then be removed from the machine, and if in nets, from the nets, and thoroughly disentangled before entering them into the dyebath proper. Then enter the dyestuff at 100 to 120° F., rather than at a boil as indicated. We also advise having the sulfonated castor oil checked for acidity. Such oils are sometimes rather strongly on the acid side, and will produce serious trouble with certain types of dyestuff.

Before dyestuffs are used, their behavior as to exhausting qualities and temperatures at which they exhaust should be thoroughly checked. As far as possible, dyestuffs exhausting under the same time and temperature conditions should be employed. It is self-evident that if one dyestuff exhausts rapidly say in 15 to 20 min. and another requires 40 to 50 min., even though they both might exhaust best at a boil, two such differing dyestuffs should not be employed in the same formula. Likewise, a dyestuff which feeds on better at less than a boil should never be used in connection with one which feeds on best at a boil. When such a condition is found necessary, the temperature of the dyeing machine will have to be carefully controlled. In this case the dyebath is brought to a boil, and the slowly exhausting and high-temperature exhausing dyestuff first fed on; then the dyebath is allowed to cool and the dye exhausting best at a temperature below the boil is fed on. Either a wide difference in exhausting time or exhausting temperature is liable to cause shaded goods. Since the natural action of dye machines is a tendency toward tangling the goods and packing them it makes it imperative to feed on dyestuffs as quickly as possible and as nearly at the same time and temperature condition as possible so that goods may have uniform exposure to the dye liquor.

Your trouble is by no means a new one or any easy one to overcome entirely. These conditions may develop from over-crowded dyeing machines, over-crowded dye nets, dyeing machines of the wrong construction, employment of the wrong chemicals in degumming and dyeing, and improper handling of goods in the process of dyeing. We are quite confident, however, that the trouble can be located and overcome right in the dyehouse.

Finally, we call attention to the fact that the two stockings submitted were not made by either the same footer or the same legger; and we are returning the samples so that you may make a further check on this if you so desire. We mention this on the basis, that it may be of assistance in ferreting out some existing carelessness which may cause further trouble.

Inquiries should give the fullest information possible. In the case of damage to material, a sample should be sent. No consideration is given anonymous inquiries; and we do not undertake routine analyses of yarn or fabric, or investigation involving unusual expense.

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Finishing Linen Thread

Technical Editor:

We are enclosing herewith a sample of linen thread 30/15 which we understand is finished with a composition of bees-wax and paraffin mixed. Can you give us any information as to how this preparation is mixed and what kind of a machine is required to finish the thread. We do not believe that this is finished on either a Luther machine or Morrison machine. If you can give us the name of the people who make a machine suitable for this work, we will take the matter up with them. We shall greatly appreciate any information you can give us. (7534)

On this class of work the best results are obtained on a special English-type polishing machine, although production is very low. Goods results, however, may be secured from a Luther double-brush dressing machine by reducing the speed of the take-up and increasing the speed of the crease rolls. The thread should dry very slowly, and it is necessary to reduce the speed to the lowest possible point which will allow this. We also suggest using as heavy a spindle band as possible to obtain the maximum draft on the thread. To permit this heavy thread to dry properly, the speed of the crease roll is increased as much as possible; otherwise the thread will finish flat rather than round.

We also would suggest loading this machine to not over 60% of its capacity, and running the second brush at full speed. The finish used for gray unboiled yarn is different from that for boiled yarn, due to the fact that unboiled yarn is resistent to the size on account of the flaxseed oil and waxes, whereas in boiled yarn the waxes and natural oils have been removed and the thread is more absorbent. After the twine is dressed, we recommend that it be allowed to stand overnight before winding on tubes, thus permitting the sizing compound to dry out as thoroughly as possible.

The following formula is for unboiled gray twine: Into 50-gal. barrel, put 10 lb. Hycotone, 20 lb. Feculose E. T., 4 lb. gum tragacanth, 3 lb. Irish moss (thoroughly boiled and strained), 2 lb. glycerin, 2 lb. coconut oil, and 1½ oz. copper sulfate. Dissolve separately in 20 gal. of water 8 lb. paraffin wax, 8 lb. bees-wax, 4 oz. sodium carbonate, and 4 oz. olive oil. Add this to the sizing compound. The mixture in the sizing box and barrel should be kept at boiling point by using a copper coil.

Would also suggest that the thread after it comes from the sizing box be skyed about 5 ft. to allow the waxes to set before coming in contact with the brushes. This formula should give you the finish that you desire, although it may be necessary to vary the proportions of the ingredients.

New Machinery *and* Processes

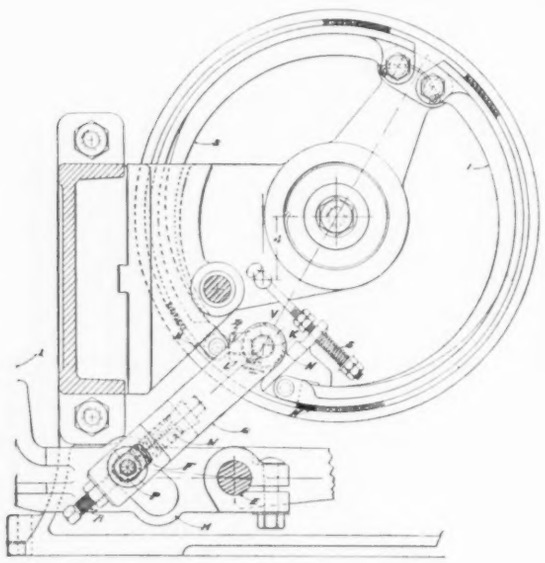
Electrically Operated Hosiery-Inspecting Machine

DETECTION of defects or weakened places in hosiery is facilitated by means of an electrically operated, single-action inspection machine brought out recently by Edward R. Ammon, Reading, Pa. The machine consists essentially of an electrical unit, cabinet, automatic counting device, and a form equipped with levers designed to expand each part of the stocking in such a manner that no stitch of the fabric is left unstretched. These levers are arranged to expand progressively so that the eye of the inspector can look from one part of the stocking to the next place as it is expanded by the corresponding projecting lever. Expansion is gradual to prevent defects from developing into runners. The electrical unit is completely inclosed within the cabinet, permitting the handling of the sheerest and most delicate stockings without fear of grease or oil stains.

With this machine, the stockings are merely slipped on the form, and a touch of the pedal starts the motor to expand the levers in their progressive order. The form is rotated without human assistance, and the entire inspection is accomplished by a single action and is always under instant control. Release of pressure on the foot pedal, when defects appear, immediately releases all expansion pressure. Each operation, rotation, and progressive expansion from welt to heel and toe, is timed electrically and automatically, at a fixed speed, allowing the operator to concentrate her attention in searching for defects.

Electrically operated machine for inspecting hosiery

As the machine can be set to operate at a speed which will correspond to the mental activity of the inspector, production is limited only by the rapidity with which the operator can properly view the fabric. When the inspection has been completed, the machine returns to the starting position, and the stocking is drawn off by the inspector and placed on an automatic device, which rings a bell and locks against the insertion of further units, when it contains a dozen stockings. The operator is relieved of practically all physical effort in inspecting the stocking, as well as the wasted mental effort of counting. Ammon foot-operated inspection machines are capable of being electrified by the insertion of an electric unit in the compartment available for that purpose.

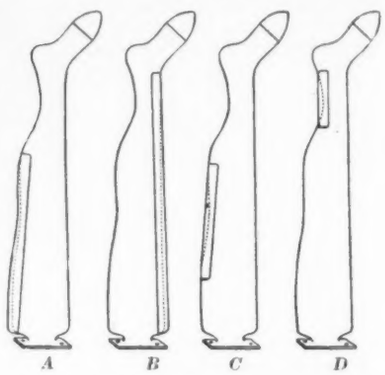


Sketch of improved brake for high-speed warpers

Metal Drying Forms

DRYING of various shapes and sizes of hosiery on one form is made possible with the improved "Adjustoe" drying form, brought out by Philadelphia Metal Drying Form Co., Eighth St. and Columbia Ave., Philadelphia, Pa. The newer models permit drying of as many as six shapes and two sizes on one form. Advantages claimed for the form are that it makes for greater adaptability in creating new styles and gives greater flexibility in boarding room.

The device consists of a metal form together with attachments which can be clamped on to change the size or shape. The accompanying sketch illustrates the manner in which this change is effected. In the illustration, *A* is a form for women's hosiery with attachment to widen leg and welt; *B* with attachment for outsize; *C* with attachment to straighten leg; and *D* with attachment for anklet. Other forms and attachments are available for drying socks, half socks, misses' hosiery, boys' hosiery, golf stockings, etc.



Form fitted with attachments for drying various sizes and shapes of hosiery

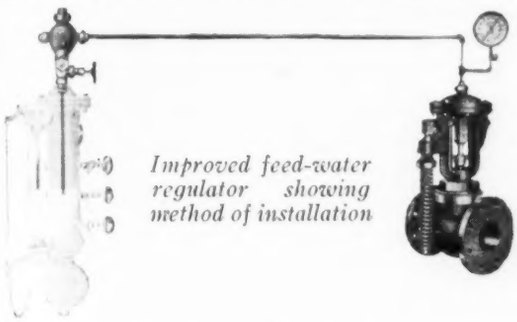
Brake for High-Speed Warpers

AN IMPROVED brake for high-speed warpers has been developed recently by Saco-Lowell Shops, 147 Milk St., Boston. This brake is designed to stop modern high-speed warpers in a smooth and easy manner and with a gradual deceleration of the moving parts. It is stated that beams made on warpers equipped with this brake will run on the slasher with less laps, less lost ends, and without yarn breakage as a result of chafing.

The brake, as shown in the accompanying illustration, consists of two brake shoes, Nos. 1 and 2, pivoted on two steel studs at the upper end. The lower end of shoe No. 2 is connected to the stud *K* through the link motion *L*. The lower end of the shoe No. 1 is

attached to the cam *H*, which has an inclined surface. At the upper end is an eye which bears against the spring *S*, and effects the rapid release of the brake, and also prevents its dragging while the warper is in operation. The stud *K* is attached to the arm *G*, which works on the stud *P* in the slot *F*, cast in the brake lever *M*. The lever *M* is attached to the shaft *E*, which also carries the starting pedal. At *A* and *B* are adjustments to compensate for wear, and at *I* are adjustable brake weights, made in sections so as to permit accurate adjustments as operating conditions vary. At *N* is a hard fiber strip which prevents the crushing of the brake lining at the tip of the brake shoe, and reduces the wear of the lining.

The operation of the brake is simple. As the broken thread, through the drop wires, releases the starting pedal from the running position, the movement of the stud *P* in the slot *F* causes the straightening of the link *L*, which forces shoe No. 2 against the drum. At the same time the motion of the arm *G* against the inclined face of the cam *H* forces shoe No. 1 against the drum, both actions taking place simultaneously and without grabbing or jarring. The gradually increasing pressure of the shoes stops the warper quickly and smoothly. The brake shoes are lined with molded asbestos linings. Spring *W* is used to keep the arm *G* in tension against the screw so as to avoid vibration and give noiseless operation.



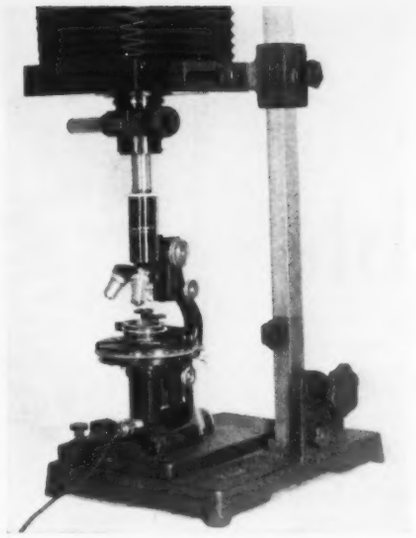
Improved feed-water regulator showing method of installation

The improved warper brake is standard equipment on all Saco-Lowell high-speed warpers.

Automatic Feed-Water Regulator

FOR maintaining uniform water-levels in steam boilers a feed water regulator of improved design has been brought out by Atlas Valve Co., Newark, N. J. Advantages cited for the regulator are that it assures delivery of dry steam, assists the boiler to overtake a sudden increase in load, restores the water level quickly, and reduces operating costs. The unit, consisting of a regulating element, pressure gage, and feed-water control valve, can be installed at any convenient place in the feed-water line.

One of the chief improvements in the new model is the drilled sample pipe, this design tending to retard the action of the control-valve disk and thus eliminate wide swings that might otherwise take place on slight changes in level, due to surges or other causes which do not reflect a permanent level change. Drillings are less sensitive to changes in the moisture content of steam passing through them than was the slotted pipe of the original design, hence the increase or decrease in pressure transmitted to the diaphragm of the control valve is retarded to an extent that the valve fully opens or closes only on extreme level changes. It is stated, in fact, that a combination of drilled holes is employed which makes it necessary to have a level change five times as great as with the slot to cause the total diaphragm pressure change between maximum and minimum.



Textile mount for making stereoscopic photomicrographs set upon microscope.

Textile Mount

CONVENIENT facilities for handling yarn and fabric specimens for simple microscopic examination or for production of stereoscopic photomicrographs are provided by a textile mount announced recently by Bausch & Lomb Optical Co., Rochester, N. Y. This device which was developed in cooperation with Professor E. R. Schwarz, of Massachusetts Institute of Technology, is designed to avoid the application of tension to the specimen under examination, and thereby prevent distortion of the sample.

To permit production of stereoscopic photomicrographs with an ordinary microscope and camera, the base is so constructed that the specimen may be tilted 5° to either side of horizontal. A marked disk is used for centering the mount under the microscope; it is black on one side and white on the other, furnishing a contrasting background when incident light is used.

Speeds Are Synchronized By New Method

SYNCHRONIZATION of operating speeds of two or more non-synchronous electric motors can be maintained by means of a new control system announced by General Electric Co., Schenectady, N. Y. This system, in which small self-synchronizing motors play a fundamental part, is expected to be of advantage in industrial applications where synchronous operation of different machines or devices is essential.

In installations with two driving motors having adjustable speeds to operate over a wide range, Selsyn generators are mechanically connected to the shafts of each motor. A Selsyn differential motor has its stator electrically connected to one generator, and its rotor to the other. When conditions are normal, the two generators are in synchronism, and the Selsyn motor has no tendency to rotate. Any deviation in speeds between the two generators causes the differential motor to rotate forward or reverse, depending on which generator is ahead, the motor speed being equal to the difference between generator speeds. The Selsyn motor is geared to a cam that actuates a carbon-pile resistor which is connected in the field circuit of one motor. The resistance of the carbon pile changes with pressure, and thus changes the speed of the motor and again establishes a balanced condition.

In this way a single manual-control equipment can be made to govern two d.c. motors. Adjustments in the speed of the manually controlled motor are immediately reflected by exactly proportional changes in speed of the other motor. This system of control, by the addition of simple gearing to drive one generator, can also be used to maintain predetermined proportional speed relations between two or more mechanisms driven by non-synchronous electric motors of widely differing speeds.

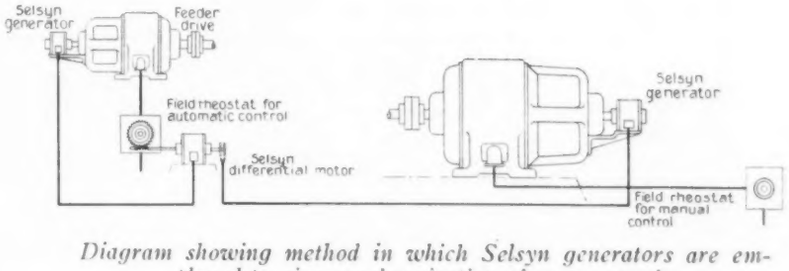


Diagram showing method in which Selsyn generators are employed to give synchronization of motor speeds.

Overseers' Round-Table

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

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Overseers' Salaries

Editor, Overseers' Round-Table:

I BELIEVE an overseer should be paid according to his ability. The modern tendency is to have every possible operation in the mill on piece work. It would not be out of order at all, in my estimation, to pay overseers by a similar method.

Certainly an overseer who puts out more efficient work and lowers the cost should receive more than the overseer that spend most of his time figuring up excuses, or the man that just lays down on the job. Every mill manager has an individual process cost by which he is guided in quoting his prices. Is not a man that can keep his cost below the allowance worth more to the company than the overseer that is always to be reminded of his cost?

We are all salesmen of some classification. No modern business would think of a salesman working without due consideration for the extra business that he obtains. An overseer is certainly making business for the company when he can enable them to quote lower prices due to his management.

C. F. P.

Libraries for the Mill

Editor, Overseers' Round Table:

ANY TOP-NOTCH executive will admit that reading plays an important part in the success of any business. A library of business books and a reference file ought to pay real dividends in resultant efficiency.

Business books are tools. You must pick the right one for the job at hand so you need a good supply in the library just as you have tools in the tool room. One book will not cover all the job, but every book, to be worthy of a place in the library, should have at least one good idea, presentation of proven practice, or reference data. One good bit of learning from any book will pay for the time taken to glean it.

Keep the library up to date as you know that times are changing so fast that it makes your head swim. Trained leaders are generously casting off the old cloak of secrecy and are contributing their ideas and experiences to literature. As one recent writer puts it: "Today we have a new, practical type of business literature. The pattern of the writing contains a warp of sound economic training and a woof of vivid, first-hand experience in business."

C. H. WILLEY

Editor, Overseers' Round Table:

I AGREE with Hank and Pete that a library and reference file would be very useful in any mill. A great deal of information pertaining to most any type of business can be secured by reading different books and periodicals published today; some of the ideas took years to formulate.

Qualifications

"YOU ARE, of course," said Superintendent Chase, "all overseers, and there must be some good reasons why you have the jobs, but just looking you over casually there seem to be quite a few different types. I was sort of wondering to myself the other day whether there was some definite qualification above all others which made a man a good overseer or whether there were all sorts of qualifications mixed in."

"Now," Chase smiled, "I hope to have the pleasure of hearing you say what, in your mind, makes a good overseer. There are times when I have to pick an overseer and there are times when you have to keep the possibilities of further advancement in mind when recommending a man for second hand, so it would help us all to find out what the majority feel an overseer should have by way of qualifications."

"If there is any one thing an overseer must always have," Bill spoke up, "it is knowledge of the job. Anyone who doesn't know his onions will never make a good overseer. You have to know what to do so you can tell others how to do it. You have to keep your nose right on the grindstone, keep your finger in everything and get out production. You don't have to know much about theory and you don't have to be able to keep pretty records; someone else can take care of such things. Give me the man who actually knows better than anyone else what can go wrong with the work in his department and who can avoid, or straighten out, any jams, and I'll show you a good overseer."

"The man Bill talks about," Tex jumped in, "may make a good operative, or perhaps second hand, but he'll never be a good overseer. I think that the biggest thing for an overseer is to be able to handle the help properly. I have seen men who were wonders in a practical way but who handled the help so poorly that there was always trouble. On the other hand, I have seen overseers with less knowledge get out more and better work because they had everyone working for them. Remember that you can learn the practical knowledge that Bill speaks of, but you almost have to be born with the talent for handling others so they will cooperate, so give me the man with such a knack

Overseer

and I'll guarantee he'll turn out to be a good overseer."

"Both the points Bill and Tex bring up are important," Pete offered, "but any man who turns out a grade A overseer will always be found to be a little bit of a dreamer in my estimation. I don't mean a sleeper, but a man who is curious and wonders about things. Such a man doesn't need all the practical knowledge Bill advocates; if something new turns up he knows where he can look to find the answer or he has enough curiosity to find out. On a practical problem of bad work he looks not only for remedies, but he goes further and tries to find out what brought on the trouble; he is a little of a theorist and often works out new methods. If he has trouble with his help he digs down to find out the cause. Give me the man who is never satisfied but who dreams of better things."

"Aw," Joe put in sourly, "just give me the fellow who turns out to be a good overseer. There is no use trying to figure it all out. If you think a man looks fair, put him on the job. If he clicks, he clicks, if he doesn't, try another. You talk like these birds who come around and say they can tell you how many neckties you have just by feeling the bumps on your head."

◆

Do *you* think that there is any one ability, or qualification, which an overseer should have above all others?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

I believe, also, that if the librarian keeps a record of the books and follows up the readers it would serve to develop from the workers useful material for future executive positions. HAROLD I. CLAUSER

Editor, Overseers' Round Table:

I AM of the same opinion as Hank is about a library. I, for one, keep everything of importance I find in the writings of overseers and superintendents. I cut the items out and keep them in a book under three headings. I find them of great importance in keeping up with problems which present themselves from day to day.

If all of us would do this I think that it would help us in getting out production for our employers, which I know is what counts for both of us. I keep my book in my desk where it is always handy. It would be the same with a library where we could go and look up what we wanted. I do not think that any overseer would need to take a book home as he could look up what he wanted while at work.

Where I am working at present we have a class of goods which gave a lot of trouble. I looked in my scrap book, found just what I wanted to know in ten minutes, gave it to this foreman, he put it to work and there was no more trouble. You can see what we gained by keeping up with every little thing which is good. C. W. P.

Editor, Overseers' Round Table:

IT OCCURS to me that Hank and Pete are laboring under a false impression. Their idea of having a library in the mill is preposterous. If an overseer needs enlightenment on some point, let him go to the superintendent or some official in charge who should know and, incidentally, usually does know. For is this not the usual procedure and do they not usually know? Of course it is and of course they do.

Bill is right about not being able to afford frills these days, and, besides, this is a frill that offers no real inducement. An overseer should do his parallel reading at home or in the public library after work hours.

In lieu of this suggestion made by Hank and Pete, the superintendent or corresponding official should be provided with this reference material and pass it on to the various overseers when a demand is made for same.

M. MACK SAUNDERS
The Elmore Thread Co.

Changes Made in the Overseer's Absence

Editor, Overseers' Round Table:

MY PERSONAL opinion is that a superintendent is overstepping his position when he goes into an overseer's department and makes changes without the knowledge of the overseer, whether the overseer is absent or not.

All overseers know that the superintendent is their superior and that they have to take their orders from him, but a superintendent should always remember that he, in turn, has a superior and that he would not like this superior to come in and make changes without consulting him. We are all human and none of us has so much experience and so many qualifications that we cannot listen to our superiors: cooperation is prosperity. OVERSEER OF WEAVING

◆

Summary of Discussion on a Mill Library

Approximately 70% of the contributions believed that it would be advantageous to have a mill library and reference file which would contain books and periodicals of practical use to the overseers, stating that such a collection of material would be far more valuable than the necessarily limited material owned by individual overseers. Those opposing the idea held that it would be too much of a bother and expense to handle a library properly and that each overseer could easily carry on his reading through his own resources.

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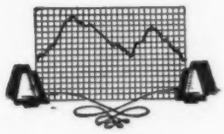

Continued Weakness in Raw Silk Is Forecast

By Dr. L. H. Haney

THE silk industry as a whole has recently been experiencing some of the more acute pains of liquidation and readjustment. The manufacturing end has been reducing its operations, a procedure which had become inevitable in view of the distress selling of silk textiles. Reduced production of silk goods, of course, tends (1) to sustain the price of silk goods, and to lower the cost price of the raw material. Silk manufacturers' profit margins have long been unsatisfactory and have not improved as raw silk prices declined. Since sales volume has held up fairly well the fault lies with over-production and weak goods prices.

The raw silk markets are suffering from a disappointing demand. The weakness on the demand side is backing up on the Japanese markets. As is usually the case in restricted markets, the price maintainers are now "holding the bag." The attempt to dispose of a small percentage of the stocks previously withheld brought record low prices—an all too common experience where markets are not free. And the worst may not be over, for the closing of filatures in March did not strengthen the market sufficiently to permit the sale of the alloted amount of custody silk, and liquidation had to be postponed in April. Even the reported estimate of the Spring crop was received with some skepticism. If the reports as to the probable congestion in marketing of cocoons are reliable, stability in Japanese raw silk markets will be slow in arriving.

Bull Points

1. Liquidation of Japanese warehoused silk has begun, but the movement will be gradual. The proportion of better quality is probably small.
2. The Japanese spring cocoon crop will probably be reduced from 5% to 10% compared with last year. The summer crop may be reduced by a still larger percentage (20% to 30%).
3. Desire of Japanese reelers to restrict output tends to prevent the stocks of raw silk from increasing rapidly.
4. Stocks of raw silk at New York continued to decline in April and were the lowest for the month since 1927. Stocks for nearby delivery are reported to be scarce.
5. New low prices for raw silk should induce investment buying, since current world production and consumption are estimated to be in balance.
6. March spindle activity showed a slight gain after seasonal adjustment.
7. Stocks of silk goods at New York declined in March and were the lowest in several years.
8. Sales of silk goods (yardage) at New York in March made more than the usual gain over February and were larger than last year.
9. Discontinuance of many silk merchandising firms, curtailment policies, and shutdown due to strikes are making for a healthier condition in the silk goods market (though immediately this tends to reduce demand for raws).
10. Silk is still relatively the cheapest of the textile fibers.

Bear Points

1. The Japanese raw silk situation as to production and consumption in April was 2.1% adverse compared with normal (Raw Silk Exchange).
2. The quantity of cocoons left may be 25% of the last crop. Congestion and a buyers market are probable when the new crop is marketed.
3. Receipts from filatures at Kobe and Yokohama during April were larger than total export and domestic sales, and stocks increased, according to the Raw Silk Association of Japan.
4. The combined stocks at New York and Yokohama gained more than seasonably, while United States machinery activity declined in March.
5. The world visible supply increased slightly during April.
6. In the Japanese market, prices fell to a record low, even though the quantity of warehoused silk sold was much smaller than planned.
7. Imports into the United States were small in April compared either with previous years or with the quantity delivered to mills.
8. The seasonally adjusted index of deliveries for April was the lowest since August last year.
9. The trend of silk machinery activity has been downward since last November, and labor troubles will probably cause further curtailment.
10. Continued recession in commodity prices and new lows in the stock market tend to discourage buying of raw silk for investment.

The above factors indicate a liquidating market for silk. None of the favorable factors can be mentioned as having a positive or immediate influence on prices. The world situation has become no more unfavorable. Japan has begun to move the stocks overhanging the market, the new crop will probably

Summary: **While the domestic statistical position of raw silk shows some improvement, the world position does not. Decreased consumption here and increased stocks in Japan are the outstanding features. A continuation of weakness is to be expected in the next month or two, in the course of which new low levels may be touched.**

The analysis and forecast by Dr. Lewis H. Haney, director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.

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be smaller, and stocks in this country are being reduced. But none of these influences seems likely to turn the course of silk prices upward. Rather the pressure of old and new crop cocoons, and the long drawn-out liquidation of silk stocks that have been withheld from the market will make for an unsettled primary market. Sharply curtailed activity in silk manufacturing in this country points to a weak domestic market, which will tend to readjust itself to the new price levels established in Japan.

In general, the price of raw silk is suffering both from a burdensome supply situation and a diminishing demand. There is no new development in the hosiery or broad silk industries which would make for an increase in demand schedules. On the other hand, the strikes in Pennsylvania weaving mills and elsewhere probably mean a drastic reduction in manufacturers' requirements. General business is receding from the first quarter bulge, and sentiment is more pessimistic as a result of previous false hopes.

The domestic statistical position was stronger in several particulars at the end of April. One of the outstanding changes was in the size of the *imports*, which declined nearly 49% from March to 29,446 bales, and were 21.5% below a year ago. This was more than the usual seasonal decrease. At the current level of "deliveries," imports are probably the lowest for the season in recent years. Apparently the decline from the unusually high rate of imports during March reflected a slump in Japanese export sales in March and April and probably had some connection with the closing down of the filatures, although the slump in consumption in this country was also a factor.

Silk in *storage* decreased sharply in April and was the smallest for the month since 1927. It is only about two-thirds the size one year ago. In comparison with "deliveries," stocks at New York are also smaller than a year ago. Japanese silk showed the largest drop.

The slump in *"deliveries"* to mills, as estimated by the Silk Association of America, was disappointing. Deliveries were the lowest for the month since 1928, and reflect the downtrend in machinery activity. Possibly when the April figures are available it will be found that machinery activity has not slumped so sharply as deliveries. In that case, it might be inferred that there had been a reduction in invisible stocks.

In general, the April statistics made a better showing than did March, because (1) imports were low compared with deliveries; (2) the decrease in storage was more than usual for the season; (3) there has probably been some reduction in the invisible supply in the past two months.

The *stocks at New York and Yokohama* increased more than seasonally and were almost as burdensome as last summer. Domestic machinery activity declined slightly in March, and was far out of line with the level of stocks. The increase in stocks was caused by a gain in *receipts from filatures* and a decline in total sales in Japan. The trend of *sales in Japan*, based on statistics of the Raw Silk Association of Japan, was down more than seasonally in March and April. This was to be expected following the record sales of January and February in anticipation of the shutdown of the filatures in March. Until these sales show marked improvement the stock situation in Japan is likely to become more unfavorable.

The world visible supply increased slightly in April to nearly 199,697 bales which was far in excess of last year.

A balance between world supply and demand was approximated in April according to the National Raw Silk Exchange. But the Japanese situation was estimated to be 2.1% unfavorable for April and 1.3% for the season. This tends to confirm the idea that the restriction of reeling in March was largely discounted in advance.

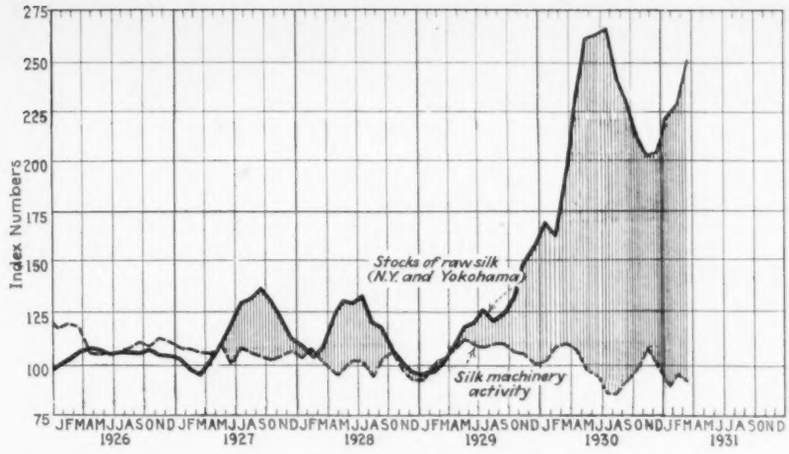

Fig. 1. RAW SILK STOCKS AND MACHINERY ACTIVITY Stocks—N. Y. and Yokohama, adjusted for seasonal variation, three month moving average; N. Y. Stocks, Silk Association: Yokohama Stocks, H. L. Gwalter & Co. Machinery Activity—Composite of spindles and looms adjusted for seasonal variation, Silk Association. Average 1923-1927 = 100 for both indexes.

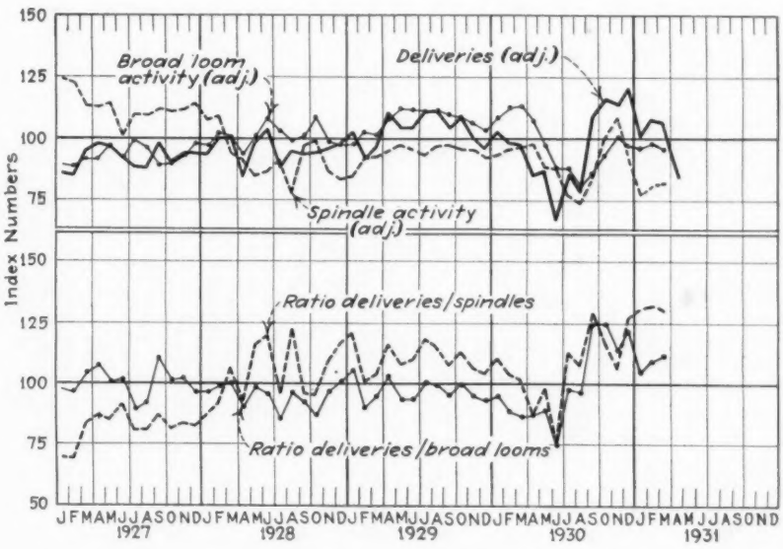

Fig. 2. INDICATED SILK CONSUMPTION. Deliveries—bales; Spindle Activity, Broad Loom Activity—per cent of normal machine hours operated. All three indexes adjusted for seasonal variation. Ratio of Deliveries to Spindles and Ratio of Deliveries to Broad Looms based on above indexes. Average of 1927-1929 = 100 for all indexes. Source: Silk Association of America.

The average price of Crack XX during April was $2.52, against $2.71 in March and $4.46 a year ago. New record low levels were reached early in May following the record lows made in Japan in April.

Sales of silk goods measured in yards, have been holding up well, but prices have been weak and the value of sales has probably declined. The yardage sales in the New York district in March were above a year ago, and probably made more than the usual seasonal gain over February. Part of this improvement, however, may be attributed to an early Easter.

The decline in deliveries in April suggests that production was reduced and the strike situation may hasten the readjustment in silk textile manufacturing. It will take several months, however, before the raw silk market can hope for much in the way of help from the silk goods market.

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YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

◆Yarn Sales Hurt by Raw Cotton Decline

THERE is no disguising the fact that the sales yarn market is in poor condition. The presistent decline in the raw material market and additional short-selling by several houses has damaged the morale of the selling fraternity. There is so little business being placed that it may almost be said to be a nominal market and there are few indications this situation will change materially until some sort of stability appears.

Buyers are using little yarn and not buying more than enough to run them for a couple of days in most instances. Although prices are holding as well as could be expected in view of the raw material decline this is not saying much nor helping correct things. Spinners are seeing their prices and margins melt away and have become discouraged, a number saying early this week that they would soon close their mills and not open them until conditions changed. Not all can afford such a policy.

Deliveries Are Smaller

Not only has new business been small in volume but most sellers report that specifications on old contracts have declined to a marked degree this month as compared with last. Deliveries in May will be under those of March by a large extent but will make a favorable comparison with those in February and April. Indications are that May will be as poor a month as has been seen this year in new business which is saying something as there have been months this year when the volume has hurt. Last week and the early part of this week witnessed no change in this respect. In fact sellers say that last week was one of the poorest they have seen in a long time.

In view of such conditions it might be expected that price ideas would vary widely and this is the case. There are spinners that are refusing to accept less than 20c. for an average grade 20s-2 warps but at the same time manufacturers assert that they are able to secure all the yarn they want in this count at 18¾c. The same thing is true in other counts although 20s is about as speculative as anything in the whole market at present.

Combed Peeler Softer

Mercerizing twist ball warps have been the soft spot in the combed yarn section and there have been concessions granted by several spinners resulting in sales at figures several cents under the level that is felt to represent the market. This has resulted in an uneven condition in mercerized. There are sellers offering mercerized under the basis that is felt to represent majority opinion, competition being keener from smaller factors than heretofore in this respect.

◆Cotton Lower in Line With Wall Street

APPEARANCE of improved weather conditions in the cotton belt toward the end of last week proved the signal for more general and active selling on the weakness of the stock market. Prices for all months made new low records for the season, and, again, as was the case last December, reached the lowest levels touched since 1915. July contracts, which had worked up to 10.19 on the rally earlier in the month, sold off to 9.04 during Tuesday's trading, making a decline of 115 points within a period of 10 or 12 days, after which the market showed indications of an improved technical position with enough trade buying and covering to cause moderate rallies.

The generally clear and warm weather reported in the South over the week-end encouraged optimistic views of cotton crop probabilities. It is the most general belief among cotton traders in New York that while the start of the crop has been delayed and considerable replanting has been rendered necessary, the latter will be no more than frequently occurs during the spring; that there is plenty of labor, and that so far there is no scarcity of seed either to complete planting or replant where needed.

It is reported that in spite of the unfavorable conditions earlier in the week, planting made considerable progress. According to some authorities it now averages about 80% completed and 65% of the amount planted is up. Reports as to acreage still show some divergence of opinion. If anything, ideas that the acreage will be reduced in excess of 10% have been a little more in favor, but some of the reports place it at nearer 8%. In a general way the crop needs dry, warm weather for the balance of this month followed by occasional showers in June, and with such conditions, would be expected to reach the beginning of July in favorable condition. The critical period of the growing season begins in July with August weather of particular importance.

No Pressure From Spots

Notwithstanding the large available supply of cotton—and it is still estimated that the world's carry-over of American lint at the end of the season would be in the neighborhood of 8¼ million bales—there is no evidence of spot offerings pressing on the market. Naturally this is due to the functioning of the futures system and the premiums on late months which afford carrying charges. So long as these late month premiums are maintained, it is unlikely that spot holders will be pressed for sales at declines, whatever might happen should favorably crop accounts bring in any general selling of new crop months and a loss of the present carrying charges.

The weakness in the stock market was, perhaps, the dominating factor on the decline in cotton during the week. Weather and crop advices were not positive enough one way or the other to take the market from the influence of the fluctuations in securities, which, of course, were regarded as an index of general business conditions. Weekly and monthly statistics as anticipated, are now comparing more favorably with last year's figures, when the depression in world trade was beginning to show more acutely, but such improvement as these figures indicate is too slow to encourage increased estimates of next season's probable world's requirements. A bullish position on cotton, indeed, would seem to depend upon a small yield per acre next season unless the reduction in acreage planted proves in excess of present expectations. According to the revised figures of the Department of Agriculture on the 1930 crop, the acreage under cultivation as of July 1, 1930, was 46,078,000 acres; the acreage harvested was 45,091,000 acres and the average yield per acre amounted to 147.7 lb.

Demand at Memphis Quiet

MEMPHIS, TENN., May 18.—Declines in contract values during the week made spot cotton harder to buy but demand

Market Briefs

Cotton: ***New lows for season established.***

Cotton Yarns: ***Falling raw material market stops trading.***

Cotton Goods: ***Showing better resistance; sales larger.***

Wool: ***Holding steady.***

Worsted Yarns: ***Men's wear counts show marked activity.***

Woolen Goods: ***Men's wear manufacturers running overtime.***

Silk: ***Undertone stronger. Buying mostly spot.***

Silk Yarns: ***Spinners report keen fall interest. Thrown yarns unsteady.***

Silk Goods: ***Summer fabrics improve; novelties promising.***

Rayon: ***Spirited buying helps fall outlook by cutting stocks.***

Knit Goods: ***Hosiery demand easier. Summer underwear active. High pressure swimsuit call inflates prices.***

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PRE-TESTED MILL WHITE

was very quiet. Sales totaled 5,242 bales against 4,763 last year and 10,999 the year before, making 689,311 bales for the season against 986,054 last year and 908,750 the year before. Receipts were very heavy, season considered, but unsold stocks were further reduced, totaling only 17,233 bales at the end of the week against 42,310 bales last year; receipts consisted mostly of buyer stocks, indicating that relatively more cotton is being concentrated at interior centers and that less is being shipped to certification points with a view of tender on contract.

There was scattered mill demand for sizeable even-running lots but the general run of inquiry was of the hand-to-mouth variety. Premium staples shared the general quiet, with basis about unchanged from the previous week but full basis is demanded; some cotton, premium staples principally, is held above the market at fixed prices in total disregard of basis; most of the few remaining crop lots are so held, owners relying on their belief that there will be an acute shortage in all qualities of staple cottons before the new crop starts to move.

Weather during the week, except the last one or two days, was unseasonably cool but otherwise mostly favorable; germination was slow but uniform. Most of the crop in delta sections has been planted and most of it is up. It is claimed that cotton is dying and that much replanting will be necessary. The warmer weather, if continued, will probably quiet such fears.

◆Cotton Waste Prices Weaker

THE cotton waste market is featured at this time by an almost complete lack of buying interest and prices are weaker than they were a week ago. An already depressed situation has been rendered more so by the action of the raw cotton market during recent weeks. Some time ago dealers had hoped that demand would start to pick up again, but they now believe that consumers have definitely delayed placing orders until such time as the cotton market shows greater stability, and more is known about the probable size of the new crop.

Peeler comber could be bought this week at 8c. with a few dealers still holding for 8¼c. While peeler strips remain quotably unchanged on a range of 7½c. to 7¾c., most of the small business done this week was on the lower side of this range; upland strips are now quoted 6¾-7c. Values on threads for machining, and bedding and upholstery stocks are largely nominal owing to the small volume of business being done in these types of wastes.

◆Worsted Yarns Bask In Demand Sunlight

MAY will be the best month spinners of men's wear mixtures have experienced in a long time and indications now are that it also will be a good period for knitting yarn spinners although slightly under the April total.

Bathing-Suit Business Slowing Up

Bathing-suit interest has been exceptionally good in recent weeks, but for the first time this week there were signs that the best of this demand has been seen.

There was a less imperative call from manufacturers and, while sales to bathing-suit trade are still large and will remain so far the next few weeks, signs of the approaching end of this brisk call have made their appearance this week. This interest will be sorely missed by knitting yarn spinners who are hoping that larger demand from sweater manufacturers, which is here, will expand further and take the place of the vacuum left by swimsuits.

Sales of yarns to be used in the manufacture of infant's wear have declined this month. In April this trade took large shipments but interest is not expected to develop again at that rate until later in the summer, July or August being mentioned as probable dates for this to come to hand. Small, filling-in orders have been the rule this week.

Men's Wear Business Leads

Men's wear sales and deliveries are the feature of the entire market at this time. Many of these manufacturers are rushing to make prompt shipments and to do this they are running overtime. This means that their former yarn contracts are insufficient to run them on that basis and new yarn contracts have been placed. Mixture spinners of both English and French report a satisfactory demand and many that they have been forced to operate on better than single shift basis.

The early season development of the men's wear business has been a surprise to the yarn trade as well as to men's wear mills themselves. Yarn buyers made no preparations for the rush volume of goods orders that have been placed and contracting in mixtures has been of notable quantity. Manufacturers realize that spinners cannot make deliveries of special yarns in a week and in view of the goods volume they are booking they have loosened their ideas regarding yarn purchases.

Quotations Are Firmer

Prices throughout the market have a firmer appearance and, while much of the business passing is seasonal in character and not sufficient upon which to base predictions of higher prices, there is a definitely stronger tendency. Reductions in prices are no longer being made. There is a better margin for spinners in French than in English spun knitting.

◆Price Equilibrium in Wool Position

THE WOOL market shows some improvement. Raw material supplies are moving more freely into consumption. Topmakers are buying more wool, chiefly finer grades, against contracts received recently. Prices do not change much either up or down, the market having achieved something of an equilibrium. In a period of falling prices, steadiness of wool is considered noteworthy, suggesting as it does, that this essential industry is not unlikely to lead in general business recovery.

Quantities of new clip wools arriving in Boston parts are sold already to manufacturers, subject to approval on inspection. Prices paid are in the range of 58-60c. for original bag wools above half-blood and 55-57c. for fine to half blood wool. New clip operations are less aggressive. Competition between independents and cooperatives is less keen on a comparatively stable price level. "We are getting all the wools we want," said a leading independent. Scoured and pulled wools are in spotty demand. Pulled B wool is easy in price now that rather extensive operations in this type have resulted in mills acquiring all the material they need for immediate use.

The shearing season opened slowly. While prices are on levels substantially lower than those a year ago dealers offer the best they can in view of the slackening demand in seaboard markets and easier prices on unsold wool. Considerable activity is noted in Utah, where competition between the cooperatives and independents is keen. Little has yet been done in Montana.

Domestic wools are arriving from the West in large volume. Total Boston receipt for year to date is 7,000,000 lb. ahead of last year. Boston imports show a decline of 11,000,000 lb. Shipments out of the city are approximately same as last year, 52,000,000 lb., not including motor truck deliveries.

Prices at the London sales have been easing off as buying became less urgent. The London level closed about 5% below its opening. Bradford has been bidding lower prices, met by some wool holders and refused by others. The sales became so draggy that the auctions closed May 15 instead of May 19 as originally intended.

Imports of Australian wool this season will show a very decided increase

YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

over last year, but figures are not yet available. South American imports show marked decline, arrivals from Montevideo 53% smaller than last year and a decline of 25% in imports of wool from Argentina.

◆Woolen Materials Develop Strong Spots

WHILE the wool rag market of late has been hesitant and weak, except in one or two sorts, the reworked wool industry, adjusting itself to actual supply and demand, has advanced its asking prices on a number of standard recovered wools. Comparing reworked prices with a month ago, white stocks covering knits and softs have advanced 5%. Carbonized light hoods picked and carded have also risen 5%. Black and blue worsteds have made a gain of 7% and black and blue serges about 5%. The only offset to this rise in trend is seen in fine light merinos, off 4%, and coarse light merinos off 2%. The trend seems to be toward a larger consumption and demand for colored materials.

The wool rag trade is hoping that activity and higher prices seen in a few selected stocks will, in the long run, sweep the market into a better position. For several years past mills have made little difference between lightweight and heavyweight fabrics; they have been mostly lightweight for all seasons. A reaction is seen in this method, heavyweights becoming more definitely heavyweight, suggesting the consumption of a larger poundage of wool substitutes of the various sorts.

Light hoods continue a strong feature. Dealers have paid up to 13½c. for this commodity. One prominent factor is said to be holding out for 14½c.

In spite of what are considered poor market conditions quite a quantity of wool wastes of many sorts, types, color and conditions passes out of the hands of dealers to mills at prices that in the main net a near-average profit to the seller. If anything can be inferred from statistics available the supply of wastes is slowly increasing over consumption.

The noil market is not rushed with business and under the circumstances prices are fairly firm. Worsted manufacturing is still in the lead and output of noils from the combing of wools for this branch of manufacturing continues to gain. The situation is not all that could be desired, but is more promising than at some periods this year.

Specialty noils seem to be meeting more interest and several times of late imports of white silk and Tussah silk noils have arrived in Boston from the continent. The foreign markets are all firm, but not particularly active.

◆Fall Inquiries Encourage Spinners

SILK spinners are growing more confident regarding fall prospects, thanks to active inquires now being received from the broadsilk trade. Weavers tell of plans to offer wide ranges of spun silk fabrics for the coming winter season, and do much sampling of the new yarns. Spinners say the outlook for both singles and ply yarns is good. The raw silk drop has weakened prices but it is believed this may be only momentary. Broadsilk mills are expected to begin fall buying about the end of June or early July. Meanwhile, there is a light sporadic spot call. Prices are unchanged.

Signs of rallying in raw silk brought a slight improvement in thrown yarn prices this week, but prices are still unsteady, and there is no firm demand. The silk decline last week which forced yarn quotations down stimulated buying by both weavers and knitters for a few days; the call was not strong enough to carry through the subsequent upturn of yarn prices, and the current week has been rather quiet. Broadsilk mills show moderate interest; both crepes and organzines are in call but all orders are small and mostly nearby.

◆Raw Silk Shows Signs of Rallying

CONTINUED fluctuations with a firmer undertone featured the raw silk market early this week. Monday brought a strengthening in Yokohama and Kobe, and prices advanced 30 yen, which had a favorable effect on New York quotations. Buying sentiment here, however, is still hesitant; there is plenty of call for spot silk, but little interest even in 60 day business. Even spot orders are accompanied by some haggling; conditions at that end promise to improve, as available stocks of 13/15s and 20/22s are scarce in New York, and importers are resisting effort to depress prices further.

The market is a few cents above last week on the average, but the outlook is uncertain. Much depends on the Japanese policy as regards the stocks now in bond. Reports that wholesale dumping had been planned now appear unfounded; to date, the Japanese have been very conservative in the quantities of surplus placed on sale, and indications are no further surplus stocks of any size will be released until after the cocoon buying.

Broadsilk manufacturers seem convinced that further price declines are coming, and they refuse to cover beyond actual requirements of the moment. Then, too, their own turnover an summer fabrics has been backward, and they have slowed down somewhat on contracts for that reason.

New York importers are divided as to what would be the best way of handling the sale of the warehoused silk. The chief opinion seems to be that a steady feeding of this stock into market, even if this should mean a temporary weakening, would be the best solution. It is complained that consuming industries tend to exaggerate the significance of the surplus.

◆Big Rayon Call Aids Fall Outlook

HIGH-PRESSURE buying continues the chief feature of the rayon market. Several firms report that April sales broke all records for volume, with May turnover to date well ahead of April. The sharp drop in raw silk prices offered some set-back in the movement of the high quality synthetics, but generally speaking, the rayon market has not been affected. Producers are very satisfied with the situation; even conceding that current business is far from profitable, the demand is so spirited as to clear out large quantities of stocks and is helping toward a firm situation in fall.

Both weavers and knitters buy steadily; underwear fabric manufacturers in particular are active; numerous of these mills are producing at capacity and are pressing the rayon firms for quick delivery. There is a good call from cutters and piece goods buyers for rayon flat crepes, which has stimulated yarn sales at that end. Rayon producers are short of some specialties, the 100 deniers in particular, and are asking time for delivery.

The obsolescent yarn bogy seems to be fading, though the industry is far from normal on that score yet. Even the largest producers continue making the 150/24s and selling them at 65c.; sales however have shown a sharp decline due to gradual cut in stock and output, and prospects point to a further drop in 65c. yarn selling.

The rayon market is confident of continued active buying through the remainder of May and even into June. Sentiment among consuming industries is more optimistic than it was and, while no group is over-enthusiastic, there is a firmer undertone; fall outlook is considered better.

Rayon waste dealers find little interest among manufacturers, and demand is spotty. Some bleached thread of very good quality has been selling for 11½c., but this is above market. Generally prices tend down; there is no concerted pressure, as topmakers and garnetters are indifferent.

FABRIC MARKET REPORTS

TEXTILE WORLD ANALYST

◆Low Price Men's Wear Sales Spurt

THIS is one of the most unusual seasons the men's wear trade has ever experienced. Business with a number of houses is about as active as they can remember it within recent years; at the same time there are houses, fairly numerous, which are not taking part in this spurt. Their business is better but not in the boom state which the leading sellers report.

There is something almost fundamental that has brought this change about and it is concrete proof of a lot of theory that the trade has been talking about during the last two years. The houses and manufacturers which are doing the excellent business did not just happen to hit it. Their success has come through taking advantage of much of the theory we have been talking about.

Fabrics At Bargain Level

The mills which are securing the orders have low price merchandise in most instances, but the medium and higher price fields also have their leaders who are doing a good volume. The lines are selling which offer customers real bargains both in respect to price and to styling and quality.

Trading Active As Ever

There have been reports published that trading has become less active in the wool goods field, but this is not the case with the leading men's wear houses although it is with most women's wear. There are half dozen factors in the men's wear trade which continue to sell in as large volume as they have at any time since the present season began. Many of this group, if not all, are running their machinery overtime, this being an important factor with them in view of the close prices named. In fact, several admit that if they had not succeeded in booking this large volume they "would have been out of luck."

Cheap Woolens Wanted

That price is the first consideration in the men's wear field when strongest demand is concerned, is proved when we find that a number of woolen manufacturers turning out the cheapest suitings made of wool report that their volume has been exceptionally large during the last three weeks. This is on the fringe of the wool goods field, the next cheapest going over into the cotton-woolen suitings.

Trading in women's wear summer fabrics, which had been good until slowed down by the rainy and cool weather, has given indications of becoming sightly more active this week and the white fabrics of flannel and cheviot types have been moving better. Fabrics for fall and winter wear lack sustained interest as yet.

◆Cotton Goods May Fool Chart Fans

MAY and June are normally quiet months in cotton goods. It is possible that this year predictions along these lines will be wrong. There have been changes in the character of the market which give the impression that buying in quantity may develop at almost any time. In print cloths the temporary cutting in leading descriptions proved only of short duration because there was such a large number of buyers waiting for just this chance.

They bought enough quickly to force prices up and to cause them to stay at the higher level. Trading has been on this price basis this week and sales have been in larger volume during the last two weeks than in the preceding four. In addition leading sellers report that stocks of popular print cloths are small; this is being felt in trading, especially in 68x72s.

Another bullish development was the strong demand that developed so quickly for broadcloths. Prices of these lines were lowered to a basis under any which sellers can remember and buyers have not been slow to take advantage of these bargains. Several million yards have been taken for delivery through the summer months and the price level gives a more stabilized appearance. Most active call has been for the coarser descriptions.

New Percale Prices Ineffective

Percale prices are down to what is felt to be rock bottom, the last reduction bringing these lines down to a lower basis than has been seen for months. Yet trading has not been stimulated and printers report that few large buyers have taken advantage of them. If the market becomes staple at this level, indications are that a healthy volume of business will develop. All that buyers need is assurance that present prices will hold for a reasonable time.

Sheetings have been re-priced and there has been an expansion in demand during the last 10 days.

With price revisions through the entire market resulting in most instances in an expansion in sales, the market gives the appearance of developing added strength and stability. It is more than an even bet that instead of May and June being merely "in between months," there will be a larger volume than normally seen.

As the Hunter company points out in their letter, cotton goods have been active in a period, meaning last week, in which cotton has reached new low levels, and the stock exchange weak. Not only has the volume of business expanded, but prices have actually become steadier in the face of such bearish influences. There may be a hidden significance to the market's action in the last two weeks.

◆Summer Broadsilk Call Backward

FAVORABLE weather early this week has given a mild stimulus to the summer broadsilk lines, but business continues backward, and indications point to some spirited last-minute buying either just before or just after Decoration Day. Garment manufacturers are far from confident regarding summer prospects for ready-to-wear, and are cautions about fabric contracts. Piece goods buyers are less active than they were, but there is still a steady demand from that division.

Current interest centers on crepe prints, shantungs and summer chiffons. Crepe prints have rallied since their debacle of spring, but prices remain weak and much of the present buying of these numbers is at unprofitable levels. In shantungs, the season is opening very slowly; pastels continue important, but whites have primary attention. Shantung prices are firm and may remain so for a few weeks. The prospects of a steady and profitable shantung season are not too good; high quality lines should hold their own, particularly novelties, but the low-priced shantungs appear to be somewhat overproduced and unless the demand takes an unexpected jump, there will be much slashing to clear in June.

Summer chiffons are in a somewhat similar position. Cool weather has held back demand, but the improved weather this week may stimulate action. Weavers do not look for any volume movement of either chiffons or shantungs before the beginning of June.

Novelties Promising

With price a big factor in most of the popular lines of summer fabrics, a somewhat better prospect faces the manufacturers of novelties. Several sales managers who have both the highly competitive lines and also certain specialties of their own, note a firmer price tone at the latter end. Indeed, they look for a profitable turnover on their specialties to balance up for the price weakness in other numbers. Novelty shantungs already are exciting interest, and prices of these lines are likely to hold firm for some time after the average run of shantungs have weakened. This is a good season for the producer of novelty fabrics.

KNIT GOODS MARKETS

TEXTILE WORLD ANALYST

◆Net Hosiery Is Selling Actively

MOVEMENT of full-fashioned hosiery has been less active the latter part of last and so far this week. Whether the blame for this can be placed upon any one thing is debatable. Some say the reduction in prices has been one of the main factors; others say the weather has slowed trading, and still others say it would have become less active even without these elements.

There is after all a fair volume of business, but it is not sprinkled widely throughout the market. Manufacturers of the cheapest lines, some of which are being offered at retail at 50c. per pair, are going into consumption at a good rate and full-fashioned from that figure up to 85c. is being taken well. Low price hosiery is wanted, and the mills specializing in such numbers generally report a fair to active call notwithstanding a generally less active request.

The next active line is on the opposite end of the market. This includes all nets which are in main in the high price class. All varieties are selling well and there seems to be an inclination for this demand to expand further. There is no question that net hosiery is the outstading feature of the market and indications are that it will remain so for many weeks to come.

Opinion in the trade is strongly to this effect, there being mills that are just setting-up machinery to manufacture these lines; such firms anticipate that nets will be strong sellers for a long period.

Women's Seamless Better

Women's seamless hosiery has been in fair to good demand and as the call for cheap lines expands, rayon seamless attracts a good share of the business. For a time, when trading generally was at a better rate, demand for low price rayon lines fell off materially. The need to economize has given new life to these goods and manufacturers are predicting further expansion during the coming months.

One of the best sections in the market from the manufacturers' viewpoint is misses' and children's ribs, half hose and anklets. There has been a steady call for these lines during most times this year, but there has been a stronger tendency recently. A number of southern manufacturers of goods of this type report that their machinery is being operated more than full time. Rayon and mercerized cotton are the leading yarns used.

Sellers report that while there are active lines, as already mentioned, the market has been affected to a considerable extent by the cool weather and a spell of warm temperature is expected to have a tonic effect. Retailers hold stocks so small that when public stops buying it is soon felt down to the manufacturer. The reduction in prices of full-fashioned has been accepted by the trade and it is no longer a topic of discussion.

◆Slow Improvement In Underwear Lines

MAY will be a better month with the underwear trade than April. Although there is nothing startling occurring at the moment a steady business is being done in a number of different lines. Many of the staples are waiting for business for fall to develop. In women's fancy rayon underwear there is a good amount of interest.

The cheapest rayon underwear for women has been fair but inclined to slow down. The reverse is true when quality lines are considered and a number of manufacturers have booked a remarkable volume of business on women's fancy panties made of rayon.

Rayon Underwear Fair

It may be that manufacturers of the lower class rayon goods have gone a little further than they should have in cheapening these garments and if such is the case the reaction from the consumer may be apparent later. The public wants the lowest price lines of underwear when volume is being considered, but the sellers must give at least a semblance of satisfaction for the money.

Sellers who go direct to retail trade are concentrating on heavyweight goods this month. Although it is too early for them to report on the volume of business placed, they are fairly optimistic in view of the fact that May is usually a good month. Goods are low in price and while predictions for a boom are not heard, the trade is confident.

Men's Lines Selling Well

Men's lines are selling well, much better than women's in a majority of instances. Men's knit shirts made of cotton or rayon are moving for rush shipment, and the same is true of the woven fabric trunks to go with them.

Spot and nearby goods are moving at a fair to good rate and signs are that fall goods are moving at a better rate than has been seen heretofore. It is probable that a fair and larger volume of orders will be placed from now on in fall merchandise, but nothing startling in this regard is expected.

◆Swimsuit Prices Are Advancing

THE volume of bathing-suit business being placed is exceptional. Although it must be admitted that buyers all along the line waited until the last minute to place orders this season, causing a short rush period such as we now have, nevertheless trading is at a rate which indicates that the volume for the season may be one of the largest in the history of the business.

Individual houses state that they have never experienced such a call for spot goods as now seen. It is impossible to secure delivery within less than 3 weeks in most instances. Several of the leading firms have announced advances in prices ranging from $1 to $1.50 a dozen.

Swimsuits Too Low

Prices at the beginning of this season were ridiculously low from the maker's standpoint and the early season will not show them much profit although they did a fair volume. Profits this season will come on the second half of the buying wave when some of the higher price orders will show on the right side of the ledger.

Predictions are being made by bathing-suit sellers that if buyers do not change their policy for fall sweaters, the same thing will occur in these lines within the next few months. Although trading in them has shown expansion this week the volume is not what it should be and signs point to buyers again delaying buying until the last minute. Orders will be lost because of insufficient delivery time as is now taking place in swimsuit lines.

The rush for bathing-suits is expected to last for some time and manufacturers will have their machines running on these later than usual. This will make it impossible for them to deliver large amounts of sweaters even if they should be wanted and will cause a stronger situation in nearby delivery than is ordinarily seen.

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Underwear Promotion Stresses Yarn Quality

Numerous interesting sales aids are made available to the men's underwear departments of retail stores, in a new promotional drive being conducted by the Hampton Co., with the aim of stimulating that company's business in Durene mercerized cotton yarns. The drive was based on the results of a survey conducted for the Hampton Co. by the fashion merchandising bureau of the Byron G. Moon Co. The survey showed that yarn quality is a vital element in the successful production and distribution of high quality underwear.

◆To Vote on Combed Yarn Merger

THE merger of combed yarn mills in the Gaston County area advanced another step toward final consummation last week when stockholders of the 14 units forming the basis of the consolidation were notified that special meetings had been called for May 26 and 27 to consider and act upon the agreement of consolidation. (Details, TEXTILE WORLD April 18, 1931, page 79.) The directors of each mill have already approved the merger proposal and it is understood that enough stock in each unit has already been committed to the plan to insure its adoption by the stockholders.

Notices to stockholders also state that another purpose of the special meetings is to consider, and act upon, a resolution already passed by the directors which would authorize the acquisition of at least the majority of the outstanding voting stock of six other mills by an exchange of stock in the consolidated corporation for stock in these six units, as follows: Flint Mfg. Co., Ridge Mills, Inc., of Gastonia; Dilling Cotton Mills, Kings Mountain, N. C.; Helen Yarn Mills and Wymojo Yarn Mills, Rock Hill, S. C.; and Lockmore Cotton Mills, York, S. C.

NEILD DIVIDEND OMITTED

For the first time in 18 years directors of the Neild Mfg. Corp., New Bedford, Mass., have failed to take action on the regular quarterly dividend due at this time. The company was incorporated in 1913 and in that year paid 4¼% on its outstanding stock. From 1914 to 1922 the dividend rate grew steadily until in the latter year 40% was paid in cash in addition to a stock distribution of 50%. In 1923 14% was paid on the larger number of outstanding shares, while in 1924, 1925, 1926 and 1927 the rate was 12%; 9% was paid in 1928, 6½% in 1929, and 5% last year. No reason was given for passing the current dividend, but undoubtedly it is due to the desire of directors to conserve assets in the face of the depressed business situation.

IPSWICH LIQUIDATION PAYMENT

Ipswich (Mass.) Mills will pay on May 21 a further dividend in liquidation of $3.50 per share on the preferred stock, making total payments to date $58.50 per share. The company has been in process of liquidation for about two years.

ORR COTTON DIVIDEND

At the annual meeting of stockholders and directors of the Orr Cotton Mills, Anderson, S. C., all directors and officers were re-elected, and a dividend of 3½% on the preferred stock was declared.

Charles Chipman was elected to succeed P. T. Cuthbert as president of Chas. Chipman's Sons Co., hosiery mill agents. Mr. Chipman had been vice-president. He is also president of Chipman Knitting Mills, Easton, Pa.; vice-president of Rosedale Knitting Co., Reading; president of Butterfly Hosiery Co., Drummondville, Que.; and vice-president of Chipman-Holton Knitting Co., Hamilton, Ont. John S. Chipman, secretary and treasurer of Chipman Knitting Mills, succeeded the new head as vice-president.

A further dividend in liquidation of $11 per share will be paid to stockholders of Flint Mills, Fall River, Mass., bringing total disbursement to $46 a share.

Artloom Corp., Philadelphia, Pa., reports for quarter ended March 31 net loss of $213,217 after depreciation, etc., against net profit of $116,602 in first quarter of 1930.

Century Ribbon Mills, Inc., reports for the first three months of 1931 net income of $37,267 after depreciation and federal taxes, as compared with net income of $14,681 in the first quarter of 1930. In addition to earnings from operations in the March quarter, the 1931 surplus account has been credited with $13,758.

INDUSTRIAL RAYON REPORTS

The Industrial Rayon Corp., of Cleveland, O., and Covington, Va., reports a net profit, subject to adjustment upon detail audit as of end of fiscal year, totaled $13,363 for the three months ended March 31, 1931, after interest charges and allowances for depreciation and Federal income tax. Profit from operations before these deductions amounted to $223,058. In the quarter ended March 31, 1930, Industrial Rayon Corp. showed a net profit of $359,439.

BOSTON STOCK AUCTIONS

The following sales of textile shares were made at auction Wednesday, May 20:

Shrs.		Price	Change
30	Associated Textile	36½	...
10	Wamsutta	5¼	...
5	National Fabric & Finishing	100½	...
100	Boston Woven Hose	54½	...
10	Arlington	18¾	+¾
2	Farr Alpaca	41	—4
10	Indian Orchard	10	...
15	Naumkeag	80	...

New England Textile Stocks

Quotations at "Public Sale" are based on last sales at Boston Public Auctions and Boston Stock Exchange. Bid and Asked prices are latest quotations of dealers.

	Sale	Bid	Asked
Am. Mfg. Co., pfd	52	44	48
Amoskeag	8¼	...	...
Arlington	18	17½	19½
Associated Textile	36½	34	37
Bates	60	59	62
Berkshire Associates, com	12¼	6	7½
Berkshire Associates, pfd	40½	25	30
Bigelow-Sanford, com	22	...	...
Boott Mills	120½	70	...
Edwards	80¾	58	63
Esmond, pfd	98	95	99
Farr Alpaca	45	42	45
Hamilton Woolen	40	33	38
Hill	9	8	11
Indian Orchard	20½	16	20
Ludlow	110	110	113
Merrimack, com	35	18	22
Nashua, com	7½	6	8
Nashua, pfd	34½	28	33
Naumkeag	80	79	82
Newmarket	16½	17	24
Otis	45	42	45
Pacific	18½	...	...
Pepperell	78½	75	78
Plymouth Cordage	60½	60	62
York	8¾	7	...

Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended March 19.

	High	Low	Last Sale	Net Change
Adams Millis	26	25½	25½	—⅛
*American Thread, pfd	3¼	3¼	3¼	+⅛
American Woolen	7⅛	7	7⅛	—⅛
American Woolen, pfd	32⅛	28½	28⅝	—3⅛
*Assoc. Rayon, pfd	58	57½	58	—⅛
Belding-Hemingway	2½	2⅜	2⅜	—⅛
Botany Mills, A	1⅜	1⅜	1⅜	—⅛
Cannon Mills	21¼	20½	20½	—1
Century Ribbon	5	4⅜	4⅜	+⅛
Collins & Aikman	13	12½	12½	—1⅛
Consolidated Textile	⅜	⅜	⅜	—⅛
Duplan Silk	12½	12½	12½	...
Durham Hosiery, pfd	21	21	21	...
Gotham Hosiery	10⅛	10	10⅛	—1⅛
Industrial Rayon	31½	27½	27½	—3⅞
Kayser, Julius	12½	12	12	—1⅛
Kendall, pfd	50½	50	50½	—9⅛
Mallinson	1⅛	1⅛	1⅛	...
Mohawk Carpet	13⅜	13⅜	13⅜	...
Munsingwear	21	19	19½	—1⅛
*Powdrell & Alexander	29½	29¼	29½	+4⅛
Real Silk Hosiery	15½	13	13	—3
*Tubize	5⅛	5	5	—1⅛
United Piece Dye Works	26½	23½	25	—1½
Van Raalte	10	10	10	...

*Listed on Curb

N. Carolina Mill Stocks

(R. S. Dickson & Co., Charlotte, N. C.)

	Bid	Asked
Acme Spinning Co	55	65
American Yarn & Processing Co	48	56
Chadwick-Hoskins Co. (Par $25)	7	11
Chadwick-Hoskins Co., 8%, pfd	86	90
China Grove Cotton Mills	72	81
Climax Spinning Co	49	60
Clover Mills	..	22
Converse, D. E. Co	..	80
Crescent Spinning Co	47	50
Dixon Mills	..	85
Durham Hosiery, 6%, pfd	18	24
Eagle Yarn Mills	48	52
Efird Mfg. Co	..	38
Erwin Cotton Mills Co., 6%, pfd	85	92
Flint Mfg. Co	..	63
Fling Mfg. Co., 7%, pfd	85	92
Gray Mfg. Co	..	65
Hanes, P. H. Knitting Co	7	10
Hanes, P. H. Knitting Co., 7%, pfd	85	90
Henrietta Mills, 7%, pfd	34	43
Imperial Yarn Mills	..	55
Linford Mills	55	65
Locke Cotton Mills Co	32	50
Majestic Mfg. Co	100	115
Mansfield Mills	..	50
Mooresville Cotton Mills	3	5
Mooresville Cotton Mills, 7%, prior	..	68
Myers Mills	..	55
Myrtle Mills	..	48
National Yarn Mill	45	60
Perfection Spinning Co	54	65
Ranlo Mfg. Co	..	100
Roanoke Mills	..	40
Rosemary Mfg. Co., pfd., 7½%	82	90
Rowan Cotton Mills Co	50	62
Seminole Cotton Mills Co	..	65
Sterling Spinning Co	50	60
Stowe Spinning Co	50	60
Victory Yarn Mills Co	..	38
Ware Shoals Mfg. Co	100	115
Ware Shoals Mfg. Co., 7%, pfd	78	91
Winget Yarn Mills Co	..	42
Wiscasset Mills Co	135	142

QUOTATIONS

at close of business, May 20, 1931
Prices cover average qualities unless otherwise stated

Cotton Goods

	May 20	May 13	May 21 1930
PRINT CLOTHS			
27 -in., 64x60, 7.60.	3¼c.	3¼c.	4¼c.
38½-in., 64x60, 5.35.	5 c.	5c.	6 -6½c.
39 -in., 68x72, 4.75.	5¼c.	5¼c.	6¾-7 c.
39 -in., 72x76, 4.25.	6¼c.	6¼c.	7¼-8 c.
39 -in., 80x80, 4.00.	6¼c.	6¼c.	8¼-8½c.
BROWN SHEETINGS			
36-in., 54x60, 4.00...	5¼c.	5¼c.	7¼c.
36-in., 48x48, 3.00...	5¼-5½c.	5¼c.	9-9½c.
37-in., 48x48, 4.00...	4¾-5 c.	5 c.	6¼c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70	6 -6½c.	6¼-6¼c.	6¾-7 c.
36½-in., 64x60, 5.75	4¾-4¾c.	4¾-5 c.	6¼-6¼c.
MISCELLANEOUS			
Drills, 37-in., 3 yd...	6¼c.	6¼c.	9 c.
Denims, 2.20.....	12 c.	12 c.	15 c.
Tickings, 8 oz.....	15½c.	15½c.	18-19½c.
Standard prints.....	7¼c.	7¼c.	9¼c.
Eastern staple ginghams, 27-in.....	8 c.	8 c.	10 c.

Cotton Waste

Peeler comber	7¾- 8¼
Peeler strips	7¼- 7¾
Sak. comber	7¼- 7¾
Choice willowed fly	4 - 5
Choice willowed picker	3 - 4
Sak. strips	10½-11
Linters (mill run)	2½- 3½
White spooler (single)	6¾- 7

Cotton Yarn

CARDED (Average Quality)
Double Carded 2c.—4c. higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s....	$0.17	22c.....	$0.21
10s.....	.17½	24s.....	.22
12s.....	.18½	26s.....	.23
16s.....	.19	30s.....	.24
20s.....	.19½	40s ex.qual.	.35

TWO-PLY SKEINS AND TUBES

8s-2.....	$0.17	26s-2.....	$0.23
10s-2.....	.17½	30s-2.....	.24
12s-2.....	.18	36s-2.....	.30 - .31
14s-2.....	.18½	40s-2.....	.32 - .33
16s-2.....	.18½-.19	40s-hi.brk..	.35
20s-2.....	.19½	50s-2.....	.41
24s-2.....	.22	60s-2.....	.48

SINGLE WARPS

10s.....	$0.17	24s.....	$0.22
12s.....	.17½	26s.....	.23
14s.....	.18	30s.....	.24½
16s.....	.18½	40s.ex.qual.	.35 - .36
20s.....	.19½		

TWO-PLY WARPS

8s-2.....	$0.17 - .17½	24s-2.....	$0.22 - .22½
10s-2.....	.17½-.18	26s-2.....	.23 - .23½
12s-2.....	.18 -.18½	36s-2.....	.24 - .24½
14s-2.....	.18½-.19	40s-2 ordin.	.32 - .33
16s-2.....	.19	50s-2.....	.41
20s-2.....	.19½-.20	60s-2.....	.48

8s-3 and 4-ply skeins and tubes; tinged, 16 white, 17; waste, 15½

HOSIERY CONES (Frame Spun)

8s.....	$0.16½	22s.....	$0.20 - .20½
10s.....	.16½-.17	24s.....	- .21
12s.....	.17 -.17½	26s.....	- .22
14s.....	.18	30s tying...	.23 - .23½
16s.....	.18½	30s reg.....	.24½- .25
18s.....	.19	30s ex.qual.	- .27
20s.....	.19½	40s.....	.33 - .34

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

20s-2.....	$0.30	60s-2.....	$0.48
30s-2.....	.34	70s-2.....	.59
36s-2.....	.36	80s-2.....	.72
40s-2.....	.38	90s-2.....	.86 - .88
50s-2.....	.44	100s-2.....	1.06 -1.08

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2.....	$0.31	60s-2.....	$0.49 - .51
30s-2.....	.35	70s-2.....	.59 - .61
36s-2.....	.37	80s-2.....	.71 - .73
40s-2.....	.39	90s-2.....	.87 - .88
50s-2.....	.44	100s-2.....	1.07 -1.09

SINGLES

12s.....	$0.26	30s.....	$0.34½
14s.....	.26½	38s.....	.37½
16s.....	.27	40s.....	.38½
18s.....	.27½	50s.....	.43½
20s.....	.28½	60s.....	.49½
24s.....	.31	70s.....	.60
28s.....	.33½	80s.....	.71

MERCERIZED CONES—(Combed, Ungassed)

26s-2.....	$0.48	90s-2.....	$1.26 -1.27
30s-2.....	.50	100s-2.....	1.56 -1.58
36s-2.....	.53	120s-2.....	1.96 -1.98
40s-2.....	.56	30s.....	.60
45s-2.....	.58	40s.....	.65
50s-2.....	.60	50s.....	.72
60s-2.....	.68	60s.....	.80
70s-2.....	.80	70s.....	.92
80s-2.....	.92	80s.....	1.14

Cotton Prices and Statistics

FLUCTUATIONS OF FUTURES

	Closed May 14	—For Week— High	Low	Closed May 20	Net Chge.
May.....	9.48	9.61	8.92	9.14	—.44
June.....	9.58		9.02	9.22	—.46
July.....	9.69	9.82	9.04	9.30	—.39
August...	9.80	9.80	9.22	9.40	—.40
September	9.91	9.91	9.33	9.51	—.40
October...	10.03	10.16	9.38	9.62	—.41
November	10.14	10.14	9.54	9.72	—.42
December	10.26	10.38	9.60	9.82	—.44
January...	10.37	10.49	9.71	9.92	—.45
February	10.46	10.46	9.83	10.02	—.44
March.....	10.55	10.67	9.90	10.13	—.42
April.....	.....	.....	.....	.....	.....

SPOT FLUCTUATIONS FOR WEEK
(Middling)

	New York	New Orleans	Liverpool
Thursday, May 14.....	9.60	9.35	5.26
Friday, May 15.....	9.50	9.20	5.26
Saturday, May 16.....	9.40	9.10	5.16
Monday, May 18.....	9.15	8.95	5.13
Tuesday, May 19.....	9.10	8.87	5.01
Wednesday, May 20.....	9.30	9.06	5.01

FOREIGN COTTONS
Egyptian Cotton

Alexandria Exchange, May 19		Change
July Sak.	15.15	—0.40
June uppers	10.41	—0.56

May-June Shipment c. i. f. Boston
(Tariff not included)

Fully good fair Sak	17.80
Fully good fair to good Uppers	13.10

(By Anderson, Clayton & Co.)

Foreign cottons	F. O. B. New York, Cents
Peruvian Tanguis Strict Middling	20¼
Peruvian Pima No. 1	19
Peruvian Moderate Rough	15
Peruvian Full Rough	20¼
China Tientsin No. 1	10¼
India Rough	7 to 10
India Smooth	7 to 10

(By Bruns-Nordeman Co.)

BASIS MIDDLING

	Saturday, May 16	Saturday, May 9
10 markets average....	8.84	9.43
Memphis.....	8.45	8.95

PREMIUM STAPLES
First Sales from Factors Tables at Memphis

Grade Strict Middling	Basis Firm
1⅛-in	11.55@11.80c.
1 3/16-in	12.90@13.15c.
1¼-in	17.40@17.65c.

CURRENT SALES

	For Week	Prev. Week	Week Before
Memphis total.....	5,242	8,668	7,417
F.o.b. included in total..	3,592	5,915	6,231
10 markets.....	18,496	25,110	20,744

MEMPHIS RECEIPTS, SHIPMENTS, ETC.

	For Week	Last Year	Year Before
Net receipts.....	11,977	4,701	4,236
Gross receipts.....	21,124	15,530	13,196
Total since Aug. 1, net..	647,511	923,114	842,905
Shipments.....	22,401	32,059	20,984
Total since Aug. 1.....	1,250,020	1,704,144	1,686,503
Total stock.....	213,246	256,162	146,818
Decrease for week.....	1,277	16,529	7,791
Unsold stock in hands of Memphis factors...	17,233	42,310	.....
Decrease for week.....	1,167	*623	.....

*Increase.

AVERAGE PRICE MAY-JUNE SHIPMENT
HARD WESTERN COTTON
F.o.b. New England

	Middling	St. Middling
1 1/16-in.....	12 -12½c.	12½-13c.
1⅛-in.....	12½-13½c.	13½-14c.
1 3/16-in.....	14¼-15½c.	15½-16c.
1¼-in.....	20 -21c.	22 -23c.

Basis on New York, July 19.10

SPOT FLUCTUATIONS AND STOCKS

Markets	Middling May 13	Middling May 20	Sales	Stocks This Week	Stocks Last Year
Galveston.....	9.60	9.20	1,987	536,248	226,681
New Orleans...	9.41	9.06	4,873	691,138	427,435
Mobile.....	8.90	8.45	2,397	251,087	5,049
Savannah.....	9.17	8.70	1,219	355,369	56,473
Norfolk.....	9.56	9.19	6,589	77,168	55,143
New York.....	9.75	9.30	1,975	226,746	199,586
Augusta.....	9.19	8.81	1,486	77,283	64,292
Memphis.....	8.65	8.30	4,005	206,496	245,357
St. Louis.....	9.30	8.55	.....	5,982	10,019
Houston.....	9.55	9.10	4,674	949,828	670,135
Dallas.....	9.05	8.55	1,560	8,409	12,453

DIFFERENCES ON AND OFF MIDDLING

	Dallas	Memphis	Montgomery	Augusta	Average
WHITE GRADES					
M. F.....	.75†	1.00†	.85†	.75†	0.88†
S. G. M.....	.60†	.75†	.75†	.63†	.70†
G. M.....	.50†	.50†	.60†	.50†	.52†
S. M.....	.35†	.25†	.35†	.25†	.31†
S. L. M.....	.50*	.50*	.50*	.50*	.50*
L. M.....	1.15*	1.25*	1.25*	1.25*	1.24*
S. G. O.**.....	1.80*	1.80*	2.25*	1.75*	1.96*
G. O.....	2.45*	2.05*	3.00*	2.25*	2.60*
YELLOW TINGED					
G. M.....	.40*	.75*	.50*	.50*	0.54*
S. M.....	.65*	1.00*	1.00*	.75*	0.89*
M.**.....	1.40*	1.25*	1.50*	1.25*	1.42*
S. L. M.....	1.90*	1.75*	2.15*	2.00*	1.99*
L. M.**.....	2.65*	2.00*	2.75*	2.75*	2.67*
YELLOW STAINED					
G. M.....	1.50*	1.50*	1.5 *	1.25*	1.45
S. M.**.....	2.00*	2.00*	2.00*	2.00*	2.00
M.**.....	2.75*	2.50*	2.75*	2.75*	2.70
BLUE STAINED					
G M.**.....	1.50*	1.50*	1.50*	1.50*	1 50*
S. M.**.....	2.00*	1.75*	2.00*	2.00*	1.98*
M.**.....	2.75*	2.25*	2.75*	2.75*	2.68*

**Grades not deliverable on contract. †On Middling *Off Middling.

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne..	$0.25 –$0.26	¾ blood.....	$0.22 –$0.23
Fine clthg ..	.20 – .21	½ blood.....	.21 – .22
¼ blood.....	.24 – .25		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.61 –$0.63
California, Northern	.51 – .53

PULLED—EASTERN (CLEAN BASIS)

A.A.	$0.68 –$0.70	B-Super...	$0.47 –$0.52
A-Super....	.55 – .58	C-Super...	.42 – .45

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Staple fine	$0.63 –$0.65
Staple ½ bld.	.58 – .60
Fine and fine medium	.58 – .60
½ blood	.46 – .49
¼ blood	.42 – .45

MOHAIR—DOMESTIC

Best carding	$0.23 –$0.25
Best combing	.31 – .33

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.17 –$0.20
Cape firsts	.18 – .21

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
70s	$0.52 –$0.55
64s	.45 – .48
58s-60s	.41 – .43
(IN GREASE)	
Montevideo:	
58s-60s	$0.19 –$0.20
56s	.18 – .19
50s	.16 – .17
Buenos Aires:	
4s, 40-44s	$0.14 –$0.15
5s, 36-40s	.12 – .13

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo washed	$0.22 –$0.24
China: Combing No. 1	.13 – .14
China Filling Fleece	.12 – .14
Szechuen ass't.	.12 – .14
Cordova	.14 – .15
Scotch black face	.15 – .17
East India: Kandahar	.17 – .19
Vican'r	.23 – .25
Joria	.23 – .24

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.77½–0.80
2-24s 40s	– .85
2-26s 44s	.87½– .90
2-28s 46s	.92½– .95
2-30s 48s	.95 – .97½
2-32s 50s	.97½–1.00
(Single yarns 5c. less than above)	
2-36s, 58s	$1.22½–1.25
2-40s, 60s	–1.32½
2-40s, 64s	1.35 –1.37½
2-50s, 66s	1.50 –1.52½
2-60s, 70s	1.85 –1.87½

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.75 –0.77½
2-20s, 48s in oil	– .80
2-20s, 50s in oil	.80 – .82½
2-20s, 56s in oil	.92½– .95
2-20s, 60s in oil	1.10 –1.12½
2-20s, 64s in oil	1.20 –1.25
1-18s, 46s dyed	.95 – .97½
1-18s, 48s dyed	.97½–1.00
1-18s, 50s dyed	1.00 –1.02½
(Oil yarns 17½c. less)	
FRENCH SYSTEM	
1-20s, 58s	$1.07½–1.10
1-20s, 60s	1.12½–1.15
1-18s, 64s, dyed	1.37½–1.40
1-26s, 64s	1.17½–1.20
1-30s, 60s, Warp	1.22½–1.25
1-30s, 64s, Warp	1.25 –1.27½
2-30s, 64s, Fancy mixes	1.45 –1.47½
2-40s, 64s, Zephyrs	1.37½–1.40
1-50s, 66s	1.47½–1.52½
2-50s, 66s	1.55 –1.57½
1-60s, 70s	1.85 –1.87½
2-60s, 70s	1.90 –1.95
FRENCH SPUN MERINO WHITE	
1-30s, 50-50-58s on cops	$1.00 –1.02½
1-40s, 50-50-60s on cops	1.15 –1.17½
1-40s, 50-50-64s on cops	1.17½–1.20
1-40s, 50-50-64s Australian cops	1.20 –1.25

Underwear mixes, 3c., Solid color, 35c. additional.

New York Top Futures

	Closed May 18	For Week High	For Week Low	Closed May 20	Net Change
September	73.90	74.40	73.00	73.00	—0.90
October	73.80	74.30	73.00	73.00	—0.80
November	73.70	73.70	73.00	73.00	—0.70
December	73.80	73.00	73.00	73.00	—0.80
January	73.90	73.00	73.00	73.00	—0.90
February	73.90*	73.90	73.00	73.00	—0.90
March	74.00	74.00	73.00	73.00	—1.00
April	74.00	74.00	73.00	73.00	—1.00

*Nominal

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.83–$0.85
Half-blood (60-62s)	.78– .80
High ¾ blood (58s)	.68– .70
Aver. ¾ blood (56s)	.63– .65
Low ¾ blood	.60– .62
High ½ blood (50s)	.55– .58
46s S. A. and N. Z.	.51– .55
44s S. A. and N. Z.	.50– .52
40s S. A. and N. Z.	.48– .50

TOPS—BRADFORD, ENG. (MAY 15)

Fine (70s)	26½d	¾ bld. (56s)	16½d
Fine (64s)	24 d	½ bld. (50s)	14 d
½ bld. (60s)	22 d	Cross-bred (46s)	11½d
¾ bld. (58s)	20 d		

NOILS—BOSTON

Fine	$0.43–$0.45	High ½ bld.	$0.33–$0.35
Half-bld.	.40– .42	Low noils	.31– .33
Aver. ¾ bld.	.35– .38	Medium colored	.25– .30
Fine colored.	.33– .38		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.65 –$0.68
Lap, fine colored	.48 – .52
Hard ends, fine white	.52 – .55
Hard ends, ½ blood white	.35 – .38
Hard ends, fine colored	.25 – .27
Hard ends, medium colored	.18 – .20
Card, fine white	.25 – .28
Burr, fine Carbonizing	.28 – .30

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, Coarse Light	$0.04½–$0.05
Merinos, Fine Dark	.03½– .04
Merinos, Fine Light	.10½– .11
Serges, Blue	.06 – .06½
Serges, Black	.06 – .07
Serges, Red	.08 – .09
Knit, White	.23 – .24
Knit, red	.10½– .11
Knit, Light Hoods	.12½ – .13½
Worsted, Light	.05 – .05½
Worsted, Blue	.06½– .07
Worsted, Black	.06½– .07

Silk Yarns

THROWN SILK (60 day basis)

	Nominal
Japan organzine, 2 thd. spec. gd. XX. sk. 85%.	$3.75
Japan organzine, 2 thd. sp. crack. sk. 81%.	3.35
Japan crepe, 3 thd. gd. XX bob. 83%	3.50
Japan crepe, 3 thd. sp. crack. bob. 81%	3.40
Japan crepe, 4 thd. crack bobbins, 78%	3.30
Japan grenadine, 4 thd. sp. grand singles, 87%	4.85
Japan grenadine 4 thd. 85%	4.60
Japan grenadine 3 thd. 90%	5.65
Canton crepe, 3 and 4 thd. ns. 14/16 on bobbins	2.20
Hosiery tram, 3 thd. Japan 90%	4.50
Hosiery tram, 5 thd. Japan, 85%	3.45
Hosiery tram, crack XX 78%	2.95

SPUN SILK YARNS (Terms: net 30)

40/2	$3.20	60/2	$3.50
50/2	3.30	62/1	2.35

Raw Silk

(60 Day Terms. Spot Goods.)

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 86/88%	$2.90	$2.25	$2.20
Special Grand, 85%	2.60	2.20	2.15
Grand XX, 83%	2.45	2.15	2.10
Special Crack, 81%	2.35	2.10	2.05
Crack XX, 78%	2.25	2.05	2.00
Extra Extra, 73%	2.20	....	....
Best Extra, 68%	2.15	....	....
Canton filature, new style, 14/16			$1.40
Canton filature, new style, 20/22			1.30
Tussah filature, 8 cocoon			1.00

NATIONAL RAW SILK EXCHANGE

	Close May 13	For the Week High	For the Week Low	Close May 19	Net Change
May	2.21	2.23	2.18	2.21	.....
June	2.21	2.21	2.17	2.21	.....
July	2.20	2.20	2.17	2.19	—.01
August	2.19	2.20	2.16	2.19	.....
September	2.20	2.20	2.16	2.19	—.01
October	2.20	2.20	2.16	2.18	—.02
November	2.19	2.20	2.16	2.19	.....
December	2.19	2.20	2.16	2.19	.....

Total contracts, 667. Total number of bales, 6,670. Total approximate value, $2,055,997.50. Trading unit crack XX 78%, 13/15 white.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First	Second
50	14	$2.15	$1.95
75	18–30	1.35	1.25
100	18–40	1.10	1.00
125	36–50	1.00	.90
150	30	.70	.67
150	40	.75	.72
150	60	.85	.82
150	75–90	.85	.82
170	24–27	.75	.72
170	60	.85	.82
200	30	.75	.72
200	35–42	.75	.72
300	42–62	.63	.60
450	54–60	.63	.60
600	72–96	.63	.60
900	100–144	.63	.60

Note: So-called "obsolete" yarns, 150/24 and 150/36, still available at 65c.

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.35	$1.25	150	$0.75	$0.72
100	1.05	.95	175	.75	.72
125	.95	.85			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	65	45	$2.00
25	24	2.85	80	60	1.70
30	24	2.60	100	75	1.35
40	30	2.40	120	90	1.22
52	30	2.20	150	112	1.10
			180	135	.97

ACETATE PROCESS

Denier	Price	Denier	Price
45	$2.25–2.75	120	$1.90
55	2.05–2.55	140	1.30
65	2.45	150	1.40–1.85
75	1.80–2.70	200	1.55
100	1.65–2.45	300	1.50

Rayon Waste

Open bleached waste	$0.12½–$0.13
Open unbleached waste	.10½
Bleached thread waste (mfs.)	.09
Bleached thread waste (misc.)	.06– .07
Colored thread waste	.04
Colored clips	.04

CONVERTED RAYON WASTE

Bleached tops	$0.30–0.32½
Unbleached tops	.28– .29
Bleached noils	.11
Unbleached noils	.09½
Bleached garnetts	.12
Unbleached garnetts	.13
Colored garnetts	.10– .11

Silk Waste

Kibizzo Kakai Grand XX	$0.54
Kibizzo Kakai Triple Extra	.48
Frison Grand Double	.52½
Pierced Cocoons	.53

Woolen and Worsted Overseers Hold Spring Meeting

BLESSED with fair weather approximately 175 overseers gathered at Rocky Point, R. I., May 16, for the 48th semi-annual meeting of the National Association of Woolen and Worsted Overseers. While the principal business was in attending to the shore dinner, which was also enjoyed by many wives, the morning business meeting was more productive of interest than has been usual at times: J. H. Pickford, who has held the office of secretary for many years announced that he would not be a candidate for re-election at the Fall meeting; R. J. Harrington proposed that the advisory committee be abolished; and there was an undercurrent of healthy feeling that the association should go back more to the old idea of helping one another on practical work, rather than be a purely social organization.

After the usual routine business of proposing new members and accepting those passed by the membership committee since the last meeting, James J. Burns reported for the entertainment committee that better entertainment at the "night before" had been secured at less expense and he urged more members with talent to get in touch with the committee.

The executive committee proposed the following candidates for office: president, Tom Parkin; 1st vice-president, John P. Campbell; 2nd vice-president, Abraham L. Booth, 3rd vice-president, John C. Marley; secretary, J. H. Pickford; treasurer, Thomas Buchan; secretary Beneficiary Dept., Thomas Dorgan; treasurer Beneficiary, Thomas Buchan; trustees, James Wilson, R. J. Harrington, and P. J. Harney. As Mr. Pickford begged leave to withdraw his name James J. Burns and P. J. Harney were nominated from the floor. For the office of third vice-president the following were also nominated from the floor: John B. Driscoll, John J. Fanning, Frederick H. Craichen and Harry F. Keenan.

R. J. Harrington asked the secretary to read a resolution passed in 1924 creating an advisory committee and then stated that it was his opinion that the committee had become unwieldy and that the needs of the association could be served better by going back to the old method of having the president appoint a committee. Considerable discussion took place and the question was held over till the next meeting.

Business conditions prevented the large attendance of previous years and there was some talk of the difficult employment situation.

Cotton Exchange Officers

The following have been nominated for offices of the New York Cotton Exchange, these offices to be filled at the annual election to be held on June 1:

For president, Philip B. Weld; for vice-president, William S. Dowdell; for treasurer, T. Lurelle Guild. For managers: Eric Alliot, Herman B. Baruch, John C. Botts, Lamar L. Fleming, Harry L. Goss, Clayton B. Jones, Kenneth G. Judson, Frank J. Knell, Elwood P. McEnany, John H. McFadden, Jr., Gardiner H. Miller, Paul Pflieger, Clayton E. Rich, Simon J. Shlenker, and George R. Siedenburg. For trustee of the Gratuity Fund, to serve for three years, George M. Shutt. For inspectors of election: William C. Bailey, William A. Boger, and J. Victor di Zerega.

Style Show at White Oak Community Club

An interesting example of what can be done in textile communities to stimulate local appreciation of cotton goods was the style show held under the auspices of the White Oak Community Club, Greensboro, N. C., May 15. Approximately 100 ladies and children modelled dresses, suits and pajamas which were all home made and of cotton material. At the close of the show prizes were awarded for the most attractive children's clothes, pajamas, morning and house dresses, and afternoon and evening frocks. Judges for the style parade were Mrs. Herman Cone, Mrs. J. E. Hardin and Mrs. F. I. Noah. The program included musical and dance numbers, and a talk on cotton by M. W. Heiss, of Proximity Mfg. Co., who stressed the inherent beauty and utility of the fiber and pictured something of the romance of cotton cultivation and manufacture in the South. Other talks were made by Bernard M. Cone, Julius W. Cone and Herman Cone, executives of the White Oak and Proximity Mills.

Haywood Sees Need of Consolidation

"One of the difficulties in merchandising cotton goods today," T. Holt Haywood, chairman of the board, Haywood, Mackay & Valentine, Inc., writes in the May issue of *The Wachovia*, published by the Wachovia Bank & Trust Co., Winston-Salem, N. C., "is there are so many different units manufacturing and so many selling agents selling that it is almost impossible to control the output or maintain prices at a satisfactory level. Recently one of the executives of a large steel mill went into a certain textile situation and is trying to work the same out for the creditors. He made the statement, so I understand, that the textile business is in the same condition in which the steel business was in about fifty years ago; in other words, there are entirely too many different units manufacturing and selling.

"This phase of the situation seems to be generally recognized by all and our great hope is that in the future there will be many consolidations effected so that eventually the textile business will be more like the steel business and will be operated by relatively fewer corporations whereby production and markets can be better controlled. This will not be detrimental to the consumer nor to the operatives of the mills but, on the contrary, will probably mean just as good or better fabrics at as low or lower prices than at present, and more steady employment for labor. I do not think that anyone would want to see the steel business where it was 50 years ago and I feel sure the same thing would apply equally to the textile mills of the country if this development takes place in the future."

Rates May Be Trimmed on Silk Freight

Constructive results from conferences with representatives of the Silk Association of America on freight rates for silk shipped overland from Pacific Coast ports is expected by L. S. McIntyre, manager of the Seattle Chamber of Commerce, transportation department, who returned to Seattle on May 2 from meetings held in New York.

The Seattle chamber has been making an effort to obtain reductions by eastern railway lines of freight rates on silk shipped overland from Pacific Coast ports. He is hopeful that the eastern lines will join the western lines, which already have made rate reductions in an effort to divert back to Seattle and the trans-continental railroads the silk traffic, which is now moving from the Orient to New York largely via the Panama Canal.

Silk Association Names Trade Study Officials

Activities of the Silk Association of America, in its new trade-wide research study, are progressing steadily. A committee on cost calculation and budgetary control has been appointed by Thomas B. Hill, president of the association, to work with the association's committee on trade survey. G. P. Vetter, The Belding Heminway Co., heads the cost calculation committee, other members of which are Robert Frick, Stehli Silks Corp., E. C. Geier, Duplan Silk Corp., John I. Koehne, C. K. Eagle & Co., Inc.; J. S. Stillman, Wahnetah Silk Co.; L. J. Zimmerman, Onondaga Silk Co., Fred W. Shibley, Bankers Trust Co., advisory member, and Thomas B. Hill, C. K. Eagle & Co., Inc., ex-officio member.

This committee is undertaking recommendations to the survey committee regarding a budgetary control system and standard cost calculation methods for the silk manufacturer and distributor of silk fabrics.

Dr. Melvin T. Copeland, director of the Bureau of Business Research, Harvard School of Business Administration, and professor of marketing at Harvard University, has been named councillor in the survey, Mr. Hill stated. Dr. Copeland is one of the outstanding au-

thorities in the country on marketing and business research problems. He has been director of innumerable research studies of various industries, and is author of many books and magazine articles on research and marketing subjects.

Rayon in Decoration Stressed at Exhibition

Rayon was emphasized as a decorative material by leading artists who displayed at the Exhibition of Modern Industrial and Decorative Arts, which opened early this month at the Brooklyn Museum. This exhibition was arranged by the American Union of Decorative Artists and Craftsmen, as described in TEXTILE WORLD for May 9.

Donald Deskey employed a new rayon fabric known as Bouret-de-rae for a bedspread, this fabric being from Witcombe-McGeachin Co. This cloth has a slightly rough and uneven texture.

An interesting use of a coarse rayon-and-jute basket weave material was made by Alexander Kachinsky in doing the walls of an office reception room.

Wolfgang and Pola Hoffmann in an office used rayon for draperies. The material is a rayon casement from Ronald Grose, Inc. It is unusual because of its woolly appearance.

The show is, perhaps, the most outstanding instance of leading decorative artists of this country having, of their own accord, chosen rayon fabrics.

E. I. Hanson Heads Mallinson

The board of directors of H. R. Mallinson & Co., Inc., Tuesday, elected E. Irving Hanson, for some years vice-president and treasurer, to succeed the late Hiram R. Mallinson as president. In addition to Mr. Hanson's election to the presidency, Robert S. Berryman, secretary of the company, was elected treasurer. W. J. Beckley, Edwin C. Kenton, Alfred Eller continue as vice-presidents. Mr. Beckley remains in charge of the retail sales of the company and Mr. Eller of the cutting up trade distribution.

The first official act of the new president, E. Irving Hanson, was to appoint a committee to draw up a resolution of condolence on the passing of Hiram R. Mallinson, as well as a suitable tribute to his memory. This resolution will be spread on the minutes of the company, and a copy presented to Mr. Mallinson's family.

Mr. Hanson joined H. R. Mallinson on Jan. 1, 1914. Before that he had been active with Valentine & Bentley for several years.

U. S. Institute Directors to Visit M.I.T. Laboratories

Directors of U. S. Institute for Textile Research have been invited to inspect the textile and other research laboratories of Massachusetts Institute of Technology the afternoon of Tuesday, June 16, following their quarterly business meeting, scheduled for that morning at the University Club, Boston.

Tentative Sizes for Women's Rayon Underwear Adopted but Subject to June 24 Meeting

A TENTATIVE schedule of size standards for women's circular flat knit rayon underwear was approved at a conference of rayon underwear manufacturers and cutters-up, which was held at the New Yorker Hotel, New York City, May 15. The conference was called by the U. S. Bureau of Standards as a follow-up to the recent conference in Washington, where a schedule of standards for all other knitted underwear lines was formally approved. A committee, headed by Frank Stutz, of the Better Fabrics Testing Bureau of the National Retail Dry Goods Association, had drafted standards for the rayon lines, and these standards were read at the New York meeting.

The proposed specifications proved the theme of much discussion and were considered in detail at an all-day meeting. Following the discussion widths and lengths were changed in numerous instances and tolerances were altered from the term "minimum" to plus or minus percentages and inches. The sizes also were rearranged and grouped into divisions, headed "small," "medium" "large" and "extra large" and "double extra large." Several hitches developed during the meeting, one point made being that the Associated Knitted Underwear Manufacturers of America was not represented by members on the committee drafting the original schedule. Roy A. Cheney, executive secretary of that organization succeeded in reconciling some of the dissenting elements and finally a compromise was reached, and the schedule adopted.

The schedule will be further reviewed at a general conference of the underwear industry to be held June 24 at a place not yet determined. It was felt that much progress had been made, in that a definite draft of specifications is now ready for submission to the rayon underwear industry as a whole. Indications are the coming conference will develop new points of issue, but those in charge of the conference are confident that a permanent schedule of sizes which will do much to stabilize rayon underwear manufacture soon will be available.

Wool Votes Point to Night Work Elimination

Early returns from the ballot being sent to the wool industry by the Wool Institute, Inc., on which manufacturers are voting whether they are in favor of the principle that night employment of women and minors should be eliminated as soon as possible, not later than July 31, 1931, indicate that the great majority so far received are voting in the affirmative, according to Bart Murray, acting director.

The board of directors of the Institute voted, April 29, to recommend to wool manufacturers that the employment of women and minors at night should be eliminated by that date.

In commenting upon the resolution passed by the board of directors, Eben E. Whitman, William Whitman Co., the original sponsor of the question to the wool industry, said:

"The action of the board of directors of the Wool Institute in recommending the elimination of women and minors from night labor, in my opinion, is the most constructive recommendation that could possibly be offered to the wool manufacturing industry.

"The position taken is sound both from a humanitarian and economic viewpoint. If all, or substantially all of the mills will voluntarily conform to this policy, greater uniformity in the methods of operation will be brought about.

"There is no natural right that entitles certain mills to operate longer hours than others; there is no natural right that entitles certain mills to employ women and minors at night when others are not permitted to do so."

Shirting Fabric Group Elects New Officers

Lester R. Walls, Riverside & Dan River Cotton Mills, was elected president, Shirting Fabrics Association, at the annual meeting held at the Wool Club, New York, May 19. He suceeds Theodore Markthaler, Pacific Mills.

Clarence S. Brown, head of Clarence S. Brown & Co., was elected vice-president of the association; Thomas Estes, of J. P. Stevens & Co., was chosen treasurer, and W. P. Fickett continues as secretary.

The directors of the association are as follows: W. J. Baxter, head of W. J. Baxter & Co.; Theodore Markthaler; George B. Fox, of Consolidated Selling Co.; Joseph Kahn, of Jacob S. Bernheimer & Bro.; Clarence S. Brown; Albert H. Vandam, head of A. H. Vandam & Co.; Lester Walls; E. O. Barnard, of E. O. Barnard & Co., and Thomas Estes.

P. H. Bonner Quits Stehli, Plans Research Work

Paul Hyde Bonner has tendered his resignation as vice-president and director of the Stehli Silks Corp., to take effect immediately. Mr. Bonner will leave shortly with his family for France where he will engage in certain research studies for an indefinite period. He has been connected with the Stehli Silks Corp. since 1919. Henry E. Stehli, secretary of the corporation, has been elected vice-president.

Officials of the Stehli organization discussing Mr. Bonner's departure intimated that it was more a leave of absence than an actual termination. Mr. Bonner preferred to resign in order to be free of the responsibilities of the organization; he will be in Europe at least a year.

Schwabs Project Active Participation in Textile Industry

CHARLES M. SCHWAB, chairman of the board of the Bethlehem Steel Corp., has entered the textile industry, and while his primary activities will be in the nature of a preliminary test, success in this venture is expected to bring more expanded action later. This was learned confidentially by TEXTILE WORLD some weeks ago, but then plans had not been developed sufficiently to permit public announcement. E. H. Schwab, brother of the steel manufacturer, who is acting for him, outlined their plans in an interview Wednesday.

The Schwab interests are entering textiles through the medium of silk throwing. They will sell through the Textile Throwing Corp., which is the selling agency for Lehigh Valley Silk Mills, located in Bethlehem and Williamsburg, Pa. E. H. Schwab is president both of that selling unit and the mills. He plans wide extension of the mills' operations in throwing of rayon yarns, hosiery trams and silk crepe yarns.

"We appreciate that textiles and the steel industry are far from analagous and for that reason we are going cautiously. But we intend to go 100% in such work as we undertake. The plants will be thoroughly modernized and each mill will specialize in its own particular branch of throwing.

"One of the big differences between these industries, steel and textiles, seems to be the lack of organization in the latter and the unfortunate tendency toward cutthroat competition. We will not be parties to any such disastrous policies as in the end they are inefficient; we will set standards for our work and will maintain them. How far we may go in the textile industry we are not prepared to say. We have much to learn regarding details, and we will restrict ourselves to this one operation for the moment."

Mr. Schwab has deep-rooted confidence in the fundamental soundness of the textile industry, however, and believes that the basic principles which make for success in steel manufacture can apply no less successfully to textiles.

Goodall Worsted To Make Own Palm Beach Suits Next Season

AT THE end of the present season Goodall Worsted Co., Sanford, Me., will discontinue the sale of Palm Beach cloth and through a subsidiary concern now being organized, the firm will begin the making of Palm Beach suits, utilizing the fabrics which were formerly sold to the trade. The new plant to make the suits will be located at Knoxville, Tenn. Formal announcement to this effect was sent to clothing manufacturers this week.

Goodall Worsted Co., was founded about 50 years ago and had been recognized as an important factor in the manufacture of worsteds, mohairs and linings when in 1910 it announced its entrance into the summer fabric field. The first Palm Beach fabric 20 years ago was regarded as an important step forward in the manufacture of comfortable wearing apparel for men, being durable while cool, and inexpensive. It is said that the company plans to promote summer clothing on a wide scale next season.

William N. Campbell, president of Goodall Worsted Co., to explain the decision, said, in part:

"Stepping from cloth to clothing seems to us a logical and economic move. For years we have woven a cloth that millions have preferred for summer wear; indeed, the only suiting known to men by its trademarked name.

"Though we have steadfastly advertised the suits made from Palm Beach cloth, it was up to others to make them. Thus we advertised a finished product for which we could not be wholly responsible—a garment that could not claim uniformity because produced by a number of summer clothing houses, each having its own standard of make."

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended May 16, based upon data compiled by the Department of Agriculture, follow:

	Week Ended May 16	Total to Date 1931	Total to Date 1930
Domestic	9,471,000	42,707,000	35,602,000
Foreign	431,000	21,894,000	33,572,000
Total	9,902,000	64,601,000	69,174,000
IMPORTS AT PRINCIPAL PORTS			
Boston	431,000	21,894,000	33,572,000
Philadelphia	1,743,000	17,290,000	25,902,000
New York	827,000	21,080,000	23,134,000
Total	3,001,000	60,264,000	82,608,000

"National Cotton Week"

(Continued from page 21)

Goldsboro, N. C., also held this week; and the "Voice of Cotton" Pageant scheduled for May 28-29 at Concord, N. C. The Durene Association of America cooperated in both the Augusta and Goldsboro events.

An important characteristic of the "National Cotton Week" movement, and of the auxiliary efforts, is the absence of patriotic ballyhoo, at least from the plans as formulated by the initiators. It is not a charity campaign to induce the public to support a section of the country or a specific group in industry. Instead it is a straight sales appeal; an effort to show what strides have been made in the development of attractive and reasonably-priced cotton fabrics. In some quarters, this basic thought may be overlooked, but it is the idea back of the plan. As such, it deserves the support and interest which it is securing.

Defends Government Interest in "Cotton Week"

"The attack upon the Departments of Agriculture and Commerce for the interest they have shown in 'National Cotton Week' is involved in much confusion," stated Walker D. Hines, chairman of the board of The Cotton-Textile Institute.

"These Government departments are not, as has been assumed, spending Government money to promote this undertaking. Indeed, I do not understand that a dollar of Government money is to be spent for 'National Cotton Week.'

"This leaves nothing at all to the complaint unless the suggestion is to be inferred that these two Government departments vitally interested in promoting the commerce and agriculture of the country, should not even express commendation of private initiative in a particular industry to encourage a resumption of popular buying—a thing concerning which the Government has shown praiseworthy anxiety for a long time.

"If this were a case where two industries had applied to these Departments for endorsement of a movement and the Departments had rejected the request of one of these industries and had supported the movement on the part of the other, there might be basis for objection. But no such case exists."

Improper Net Hosiery Import Tax Classification Charged

The National Association of Hosiery and Underwear Manufacturers has filed a protest with the Secretary of the Treasury against the alleged improper classification for duty, of considerable quantities of imported net hosiery. These stockings, which are among the best-sellers of the season, are stated to be coming into the country as cotton, paying 50% duty, instead of as lace, which carries a 90% tax.

Wages In Wool Manufacture

Wages and hours of work in the manufacture of woolen and worsted goods, 1930, are surveyed in the *Monthly Labor Review* of the Department of Labor.

The figures show average full-time hours per week, earnings per hour, and full time earnings per week. They cover 41,400 employes of 105 representative woolen and worsted mills in 15 States in which this industry is of importance in production and number of wage earners. The wage earners covered in

the survey represent 27% of the total number in the industry in this country.

Because of the expansion of this industry in southern States these are also included in this report.

In 1930 the full time hours per week of the 38,417 employes of the 93 mills were 49.3, as in 1928. They earned an average of 47.3c. per hour or 4.1c. less per hour than in 1928, and their average full time earnings per week were $23.32 or $2.02 per week less than in 1928. The average full time hours per week for the 12 southern mills and the northern mills combined were 49.6; the employees earned an average of 46c. per hour, and their average full time earnings per week were $22.82.

The report compares 1928 and 1930 average full-time working hours per week, earnings per hour, and full time earnings per week. Each State shows a reduction in earnings per hour as between 1928 and 1930. In 1930 average full time hours per week of males ranged by States from 48.4 to 53.5; of females from 48 to 53.8; and of both sexes combined from 48.3 to 53.6.

Male average full-time weekly earnings in Massachusetts in 1928 were $26.94; in 1930 they were $24.98. Those paid in 1930 in the southern district were $18.62. Females were paid $19.63 in Massachuettts in 1930 as against $13.45 for the mills in the southern district. Mule spinners, male, were paid $32.03 for full time in Massachusetts; female frame spinners were paid $20.06; male loom fixers received $39.96; male card tenders were paid $19.73.

Knitted Outerwear Sales Off 20% in 1930

Knitted outerwear, in common with most industries, felt the general depression in 1930 which was reflected in a decrease of slightly more than 20% as compared with 1929, according to statistics prepared by the National Knitted Outerwear Association and announced by Executive Secretary Ellery B. Gordon.

Final computations, prepared in detail for the association's year book, now on the press, show a total output of $195,750,000 for last year, as against $246,750,000 during 1929. All divisions of the industry showed a shrinkage, except women's knit dresses and ensembles, which increased sales 25% over 1929 and established a degree of popularity that bids fair to continue.

Replies to Criticism of Cotton Mills

Wages and living conditions of mill operatives and the relative importance of textile manufacturing enterprises to the communities in which they are located were discussed by Landon Thomas, president, John P. King Mfg. Co., Augusta, Ga., in a letter which was read at a luncheon of the Augusta Kiwanis Club, May 11. In reply to charges against the cotton manufacturing industry by Col. R. W. Soper, of the Lenwood Hospital, Mr. Thomas pointed out that cotton mills were an asset to a town through payment of taxes and wages, that intelligence was required to work in cotton mills, that the rate of $6 per week mentioned was far below actual full week wages, and that the workers had more than the "bare existence" spoken of by Dr. Soper.

World Rayon Output for First Quarter

From TEXTILE WORLD'S *Manchester (Eng.) Rayon Correspondent*

The estimates of world rayon production during the first quarter of 1931 show a total of 99,475,000 lb. Consumption, while being considerably larger in the United States than the production, was not so satisfactory in the other countries, and is estimated at 101,300,000 lb. Details are shown in the following table:

ESTIMATED PRODUCTION AND CONSUMPTION OF RAYON, IN 1,000 LBS. JAN.–MARCH, 1931.

Country	Production	Consumption
Belgium	2,420	1,575
France	7,060	4,450
Germany	13,575	14,850
Holland	2,970	525
Italy	16,520	5,315
Switzerland	1,935	865
Japan	10,120	9,135
United States	28,600	35,000
United Kingdom	11,490	11,855
Total World	99,475	101,300

[EDITOR'S NOTE: If the above estimated rate of production were maintained throughout the year, the total world output for 1931 would be 397,900,000 lb. as compared with TEXTILE WORLD'S estimate of 416,775,000 lb. for 1930, published in the Feb. 14, 1931, issue. However, our correspondent's figures for the first quarter of 1931 do not include Austria, Canada, Czechoslovakia, Hungary and "other countries," all of which were included in the 1930 estimate. In addition, it should be reemphasized that world estimates of rayon production must be accepted with qualifications and reservations, owing to the difficulty of securing accurate information in many countries.]

Hosiery Association Protests "Unfair" Contract Clause

A clause on the reverse side of the order form of a mail order house considered decidedly unfair by the National Association of Hosiery & Underwear Manufacturers is being called to the attention of its members. This clause binds the manufacturer to "defend the purchaser in any or all litigation to which the purchaser may at any time be made a party by reason of the offer and/or sale of any of the goods."

L. R. Keeffe, acting secretary, declares the Association has been reliably informed that the mail order house in question does not call the attention of manufacturers to this condition on its order form before an order has been accepted by a mill; in other words, manufacturers are expected to assume a binding obligation of possibly far-reaching effect without being informed of the existence of the obligation.

The Association in its statement strongly urges all its members to inspect carefully the order forms of all mail order houses and chain stores, and to make sure in advance that they are not assuming obligations of which they are in ignorance.

Thrift Mill Now Pays Employees by Check

The Thrift Mill of The Kendall Co. Paw Creek, near Charlotte, N. C., now is paying its employees by check. Experience with the plan has extended only over a period of a few weeks, but Wilton Todd, Thrift manager, declares that not a single complaint has come from employees, which is taken as an indication of the acceptability of the plan since complaints usually come when an innovation is first started.

Business News

Wickwire Spencer Closes Spencer, Mass. Works

The Wickwire Spencer Steel Co., New York, is to close its Spencer (Mass.) branch works and remove the machinery to other works in Worcester and Palmer, Mass., and Buffalo, N. Y. The work of dismantling will take five months. About 50% of the employees will be sent to other plants; a score will be pensioned. Lack of sufficient business is the reason given for closing by Supt. Arthur J. Vandall.

Burrows Sloan Chairman Of General Refractories

At the last meeting of the board of directors of the General Refractories Co., Philadelphia, Pa., Burrows Sloan was elected chairman of the board, John R. Sproul was elected president, E. A. McKelvy was elected vice-president and Roger A. Hitchins was elected secretary and treasurer. All of the other officers of the company were reappointed.

W. B. Connor Co. Represent Graver Tank & Mfg. Corp.

The Graver Tank & Mfg. Corp., of East Chicago, Ind., manufacturers of such textile plant requirements as water treating equipment, tanks, and special plate construction, has appointed W. B. Connor Co., Chrysler Building, New York, as their Eastern representatives.

C. C. Neale Heads Scalemen's Association

C. C. Neale, of the Toledo Scale Co., Toledo, O., has been elected president of The National Scalemen's Association. Mr. Neale is an authority on weights and measures, and has been connected with the scale industry for forty years, the last eleven of which have been with the Toledo Scale Co. Twenty-one years ago Mr. Neale was instrumental in founding the first Scalemen's Association in the United States and was its first president.

NEWS about MEN

✦ F. F. STAFFORD has resigned as president and general manager of Cleveland (Ohio) Worsted Mills Co.

✦ MARSHALL P. ORR was re-elected president and treasurer; GEORGE P. HAMMETT, assistant treasurer, and ROBERT W. SULLIVAN secretary at the annual meeting of the Orr Cotton Mills, held at Anderson, S. C., this week.

✦ W. M. SHERARD, Hendersonville, N. C., a former president of the Southern Textile Association, has been re-elected mayor of Hendersonville.

✦ D. H. CONWAY, for many years head of the Conway Knitting Mills, Oswego, N. Y., will be among the principal speakers at the annual meeting of the New York State Conference of Mayors to be held at Glens Falls in June.

✦ JOSEPH H. WINDLE, northern and export selling agent of the Fales & Jenks Machine Co. and the Woonsocket Machine & Press Co. for the last 18 years previous to the recent purchase of these shops by the Whitin Machine Works is vacationing at his home in West Barrington, R. I., after having been connected with the industry continuously for 30 years, starting as a machinery erector and then engaging in machine designing, mill engineering, cotton manufacturing and later with the above firms. Mr. Windle has made no definite plans for the future but will stay in the cotton manufacturing or machinery business.

✦ L. M. FOWLER, head of the Palatine Dyeing Co., Inc., St. Johnsville, N. Y., has been chosen a director of a newly organized chamber of commerce at that place.

✦ STUART W. CRAMER, head of the Cramerton (N. C.) Mills, Inc., attended as trustee the meeting of the Textile Foundation held in Washington. He also attended the gathering of chambers of commerce held at Atlantic City. Mr. Cramer is a defender of the tariff legislation enacted by the Republican majority in the last congress.

✦ HENRY ROEDIGER, cotton purchasing agent for the Riverside & Dan River Cotton Mills, Inc., Danville, Va., was one of the representatives of the American Cotton Manufacturers' Association at the cotton standards conference at Washington, May 9.

✦ E. J. LIPPS has retired as vice-president and director of Lehigh Valley Silk Mills, Bethlehem, Pa., and is succeeded by THEODORE F. N. GRAY, of Allentown, as announced by E. H. SCHWAB, president of the company.

✦ J. J. BARNHARDT, vice-president, Cannon Mills Co., Kannapolis, N. C., addressed employees of the Efird Department Stores, Charlotte, N. C., May 14, on the manufacture and distribution of towels.

✦ JOHN F. TINSLEY, vice-president and general manager of the Crompton & Knowles Loom Works, Worcester, Mass., spoke on "Industrial Safety by the Employer of Labor" at the industrial safety session of the annual convention of the Association of Governmental Officials in Industry of the United States and Canada at the Hotel Statler, Boston, this week (May 18-22.)

✦ EARL E. MOWRY, vice-president and director of J. & P. Coats (R. I.), Inc., of Pawtucket, retired last week after having served the company for 36 years, the past 10 of which he has been vice-president and director.

✦ B. B. GOSSETT, textile executive of Charlotte, N. C., and vice-president of the American Cotton Manufacturers Association, will deliver the principal address at the Southern Textile Association's banquet to be held June 12 and 13, at the Isle of Palms, near Charleston, S. C.

✦ M. W. SHAUGHNESSY, vice-president of the Shaughnessy Knitting Co., Watertown, N. Y., has returned from a business trip made by airplane through the New England States.

✦ GEORGE H. WHIGHAM, chairman of the board of the Celanese Corp. of America, Inc., Amcelle, Md., has sailed for England and Europe, and will be absent for a number of weeks.

✦ EDWARD F. WALKER, secretary of the Rhode Island Textile Association, was last week appointed by Gov. Norman S. Case to serve as a member of the special commission to make a study of night employment of women in Rhode Island. The commission, including Mr. Walker, Archibald Silverman and Herbert M. Sherwood, will report to the 1932 Legislature.

✦ KENNETH B. COOK, technical manager of Manville Jenckes Co., Pawtucket (R. I.), was in charge of the cotton meeting on the program of the annual reunion of the Lowell Textile Institute Alumni Association last week.

✦ H. GOBEL, representing the Providence (R. I.) Cotton Buyers Association attended the fourth international biennial universal cotton standards conference in Washington last week.

✦ RUSSELL B. WIGGINS, for a number of years associated with Marshall Field & Co., has joined the wash goods converting and merchandising division of Pacific Mills.

✦ R. A. MORGAN, former manager of industrial relations of Tubize-Chatillon Corp.'s plant at Rome, Ga., is now connected with the Textile Development Co., Boston, Mass., and Greensboro, N. C., and will have charge of the southern area.

✦ WILLIAM H. RYDER, Providence, R. I., has accepted the position of superintendent of the Waucantuck Mills, Uxbridge, Mass. He was at one time superintendent of the Uxbridge Worsted Co., Inc. He succeeds JOHN T. BRADY, who resigned on account of ill health.

✦ W. A. HOPE, formerly of Rockingham, N. C., has assumed his new duties as superintendent of plants No. 1 and 2 of the Republic Cotton Mills, Great Falls, S. C.

✦ E. A. KISER, formerly superintendent of the Irene Mills, Gaffney, S. C., has accepted the position of superintendent of the Mercury Mills, Inc., Charlotte, N. C.

✦ HERBERT R. BROWN has resigned as paymaster at the Woonsocket (R. I.) Rayon Corp.'s Nourse Mill. He has been identified with the Social and Nourse Mills in that city for 54 years. His career began when the Social Mfg. Co. owned the Social mill. This company was succeeded by the Manville Co., and that by the Manville Jenckes Co. With the closing of the Social Mill several years ago, Mr. Brown was transferred to the Nourse Mill. He is 72 years old.

✦ PATRICK BIRMINGHAM, who has rounded out 58 years of service for the Draper Corp., Hopedale, Mass., celebrated his 80th birthday anniversary on May 15.

✦ W. E. JONES has been made master mechanic at the Louise Plant of the Chadwick-Hoskins Mills, Charlotte, N. C.

✦ WILLIAM T. LOOMIS, who recently retired as overseer of dyeing for the Hayward Woolen Co., East Douglas, Mass., and MRS. LOOMIS, have moved to East Greenwich, R. I., where they are to make their home.

✦ A. H. MORROW is now overseer of night weaving at the No. 2 plant of the Fort Mills (S. C.) Mfg. Co.

Textile Calendar

American Society of Mechanical Engineering (including Textile Section), general meeting. Hartford, Conn., June 1 to 3, 1931.

Philadelphia Textile School, Alumni Business Meeting, Philadelphia, June 4; Annual "Cruise" and Banquet, June 5, 1931.

Southern Textile Association, Annual Meeting, Isle of Palms Hotel, Isle of Palms, Charleston, S. C., June 12 to 13, 1931.

Philadelphia Textile Manufacturers' Association, Fifth Annual Outing, Manufacturers' Country Club, Oreland, Pa., June 17, 1931.

The Cotton Manufacturers Association of North Carolina, Twenty-fifth Annual Convention, Sedgefield Inn, Greensboro, N. C., June 19 to 20, 1931.

American Society for Testing Materials, Annual Meeting, Hotel Stevens, Chicago, June 22 to 26, 1931.

Chicago Yarn Men's Circle, Annual Golf Tournament, Nippersink Lodge, Genoa City, Wis., June 24 and 25, 1931.

American Association of Textile Chemists and Colorists, Annual Meeting, Boston, Mass., Dec. 4 and 5, 1931.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 17 to 22, 1932.

✦ JOHN POLLARD, a retired 50-year employee of the M. J. Whittall Associates, Ltd., Worcester, Mass., and MRS. POLLARD, celebrated their golden wedding anniversary at their home in that city recently.

✦ W. O. BEVERLEY has been promoted from shop foreman to master mechanic of the Peerless Cotton Mills, Thomaston, Ga.

✦ JOHN DUANE, Cherry Valley, Mass., has accepted the position of night boss carder at the Charlton Woolen Co., Charlton City, Mass.

✦ PATRICK H. MAHONEY, for 59 years an employee of the Talbot Mills, North Billerica, Mass., and for the last 38 years second overseer of the carding department, was retired on pension May 1. He began his services with the mills when a boy of ten in 1872.

✦ A. H. MORROW is now overseer of night weaving at No. 2 plant of the Fort Mill (S. C.) Mfg. Co.

✦ JAMES T. SHARPE, formerly overseer weaving, Thomaston (Ga.) Cotton Mills, has returned to this mill in the same capacity.

✦ ALLEN SMITH, former overseer of weaving for the Wauregan (Conn.) Co., and family, have moved to Compton, R. I., to live.

✦ J. ARTHUR BOYD, formerly overseer of bleaching at Appleton Co., Anderson, S. C., and laboratory instructor in the textile chemistry department of Clemson College, S. C., is now overseer of bleaching at Certified Laboratories, Inc., Marble Falls, Tex.

Obituary

Clarence Whitman

Clarence Whitman, chairman of the board of Clarence Whitman & Sons, Inc., New York, died May 14, at Katonah, N. Y. He was 83 years old and had not been engaged actively in the business for the last 10 years. Mr. Whitman was a pioneer in the development of the fine cotton goods trade in this country, and was one of the first to visualize that most of the white goods that were then being imported could be made in the United States.

Up to five years ago he was president of the firm bearing his name and at the time of his death was chairman of the board of Esmond Mills and president of the Wilkes-Barre Lace Mfg. Co.

When Mr. Whitman was 16 years old he entered the employ of J. C. Howe Co., Boston. After a short time he left that firm to go with James M. Beebe & Co., Boston. In 1866 he moved to New York and for nine years was associated with J. S. and E. Wright & Co., dry goods commission merchants, which concern later became Wright, Bliss & Fabyan, now known as Bliss, Fabyan & Co.

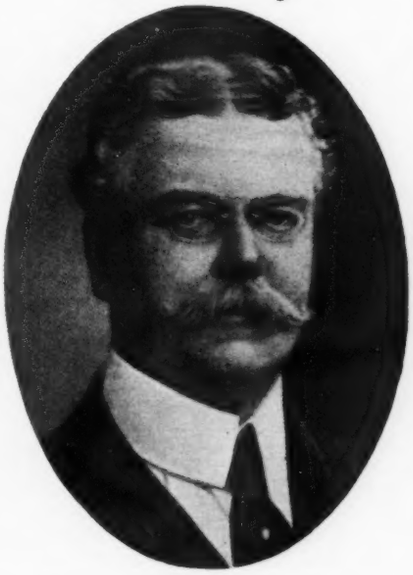
About 1875 he and his brother Eben C. established a commission business called E. C. and C. Whitman. This firm then secured the selling agency of the Ponemah Mills, which plant was to make fine goods similar to those that were mainly being imported. In 1885 the firm name was changed to Whitman & Creighton and in 1890 it was again changed when it became known as Clarence Whitman & Co.

The business grew until in 1916 it was considered that the firm was the largest distributor of white goods in the trade. Next Mr. Whitman gave his attention to the lace business which to that time had also been imported in most instances instead of being manufactured in this country. With this condition in mind he was instrumental in establishing the Wilkes-Barre (Pa.) Lace Mfg. Co.

In 1907, he built the Esmond Mills, at Esmond, R. I. Later he organized the Regina Lace Co. at Central Falls, R. I., for the manufacture of Levers laces, also the Draycott Mills, at New Hartford, Conn., for the production of bobbinet, and the Touraine Co. at New Hartford, Conn., for the weaving of silk novelties.

Mr. Whitman became a member of the New York Chamber of Commerce in 1897. For five years he held the office of president of the Merchants Association of New York City and he was made a director of the Credit Clearing House. His club affiliations include the Union League, Metropolitan, New York Yacht and Merchants' Clubs, and he also held membership in the New England Society.

On December 1, 1871, he married Mary Hoppin Morton, daughter of the late Chief Justice Morton, of Massachusetts and had four children. Two of his sons, C. Morton and Harold C. Whitman are associated with Clarence Whitman & Sons, Inc.



Clarence Whitman, as he appeared some years ago.

Elmer G. Childs

Elmer G. Childs, twice agent for a total of 26 years for the Boston Duck Mills, Bondsville, Mass., now owned by the Otis Co., ended his life by shooting in the garage at his home in Palmer, Mass., May 17, while his wife was at church. Despondence over ill health was assigned as the cause for the act. Mr. Childs was born in Aurora, Ill., on May 27, 1861, and coming East at an early age settled in Lowell, Mass., where he later became assistant superintendent of the Massachusetts Cotton Mills. On Jan. 1, 1895, he went to Bondsville as agent for the Boston Duck Mills, were he remained for 16 years. He was a member of the Masonic fraternity and other organizations.

Maj. Victor E. Edwards

Maj. Victor E. Edwards, former assistant chief engineer for the Merrimack Mfg. Co., Lowell, Mass., the Washburn & Moen Mfg. Co., Worcester, Mass., now the American Steel & Wire Co., and the Otis Steel Co., Cleveland, and inventor of the flying shears which revolutionized the steel manufacturing industry, and about 100 other processes used in that industry, died at his home in West Boylston, Mass., on May 16, after a long illness.

Clarence E. Cleveland

Clarence E. Cleveland, retired Webster (Mass.), woolen manufacturer, who died suddenly on May 9, made the Worcester (Mass.) Polytechnic Institute residuary legatee under his will with the provision that half be divided between James P. Bergin and Dr. Joseph C. Sullivan, Webster, who are named trustees and executors.

George Pattinson

George Pattinson, an active figure in the Canadian woolen industry, a native of Northumberland, and former member of the Ontario Legislature for South Waterloo, died at Preston, Ont., in his 77th year. For nearly 50 years he had been owner of the Pattinson Woolen Mills. He sat in the legislature from 1905 to 1914 and was a member of the Ontario Hydro-electric Commission under the late Sir Adam Beck. During the Great War, Mr. Pattinson was chairman of the wool commission which handled all wool coming to Canada from Great Britain.

Wilkinson Hall

Wilkinson Hall, 88 years old, president and general manager of the Jamestown Towel Mills, Inc., Jamestown, N. Y., until his retirement several years ago, died at his home in that city recently, following a long illness. He was a native of England and was a prominent figure in the textile industry in western New York.

William A. Pedler

William A. Pedler, 50 years old, agent of the Arcadia Mills, Lawrence, Mass., killed himself recently. He was well known to the cotton industry. He began as a mill operative, became agent of the Arcadia Mills in 1917, and rose through various mill positions. Mr. Pedler had been in ill health for more than a year.

Edmund McDonald

Edmund McDonald, aged 89 years, of Concord, N. C., formerly connected with the cotton mill industry of that city, and a son of John McDonald, who built what is now the Locke Cotton Mill, died at his home in Concord following a long illness.

George Adams

George Adams, formerly superintendent of the Brook Woolen Co. of Simcoe, Ltd., Simcoe, Ontario, Canada, was found dead recently in a Buffalo (N. Y.) hotel and is believed to have been murdered during a robbery.

Mrs. Howell Cheney

Mrs. Howell Cheney, wife of Howell Cheney, of Cheney Bros., South Manchester, Conn., died at her home in that town last week.

NEWS about MILLS

Cotton

West Bolyston Mfg. Co.'s (Easthampton, Mass.), stockholders voted May 14 to dispose of all the company's property, including real estate, plant and machinery, estimated to be worth more than $1,000,000. It is hoped to dispose of the property by private sale.

Thorndike Co., West Warren, Mass., is recalling former employees who have been idle for several months and also is advertising for new employees.

Standard Textile Products Co., New York, N. Y., is running on a 100% daytime production schedule at its different cotton mills, with one plant also operating with a night shift. It is proposed to hold to this basis for an indefinite period.

Erlanger Cotton Mills Co., Lexington, N. C., is said to be progressing nicely with the work of equipping 1,000 looms for the manufacture of fine broadcloth. This equipment was purchased from the Greensboro (N. C.) Loom Reed Co.

Lowell Cotton Mills and **Peerless Mfg. Co.,** Lowell, N. C., properties, including four separate carded and combed yarn plants with a total of 49,188 ring spindles, were bid in by R. N. Aycock, executive vice-president of the First National Bank of Gastonia, acting as agent for creditors of the mills at a receiver's sale in Gastonia, N. C., May 11. W. L. Balthis was receiver for both concerns. The Lowell Cotton Mills, plants Nos. 1, 2 and 3, were bid in for $81,000 and the Peerless plant for $35,000, subject to confirmation by the court which convenes on May 18. Under the bids entered at the receiver's sale, creditors of the Lowell Cotton Mills will realize about 50% on their claims and the Peerless Mfg. Co. creditors about 30%, it was estimated. It was felt that the creditors may reorganize the bankrupt properties and dispose of them.

Pilot Mills Co., Raleigh, N. C., closed for some time, is in process of reopening. Its officers state that orders are on hand for from 60 to 90 days work.

***Caromount Mills, Inc.,** Rocky Mount, N. C., formerly **Rollinson Mills, Inc.,** have let contract to the Bahnson Co., Winston-Salem, N. C., for installation of a new humidifying system. The mills will install 36 additional looms as soon as addition to the plant is completed.

John Culbertson & Sons, Philadelphia, Pa., are operating their looms day and night and have 12 looms on commission weaving.

Manville Jenckes Co., Pawtucket, R. I., resumed operations in the damask division last week with 100 looms going into action. The company plans to continue the weaving department on present schedule throughout the summer months.

P. F. Hesse Narrow Fabrics Co., Inc., Pawtucket, R. I., recently organized with a capital of 150 shares of stock, no par value, will take over and operate local company of same name with mill on North Main St. Incorporators of the new organization are Edward M. Brennan, John E. Canning and A. P. Quinn, all of Providence.

Lorraine Mfg. Co., Westerly, R. I., has increased its personnel to 160 operatives, as reported by Robert Boardman, superintendent. The number of employees is being increased gradually and it is expected that within a short time the entire plant will be in operation. The mill was reopened about two months ago after a shutdown that had lasted for more than a year.

Bemis Bro. Bag Co. will close its Ware Shoals, S. C., plant May 29, and the machinery for making cotton bags will be moved to Norfolk, Va., where the Bemis company has recently acquired the machinery of the Percy Kent Bag Co., and will take over the lease of the Kent company's plant building there. **Ware Shoals Mfg. Co.** will install its finishing department in the Bemis plant, it is said.

Cannon Mills Co., York, S. C., has reduced its operation from a 55-hr. a week to a 35-hr. a week schedule, as announced by W. E. Morton, superintendent. The 55-hr. a week schedule has been maintained since Jan. 4.

**Indicates previous mention of project.*

Wool

Alameda (Calif.) Rug Works, have plans under way for a new two-story addition to mill on Everett St., reported to cost about $16,000. J. A. Osterdock is company engineer in charge of construction.

Morrison Woolen Co. property, Dexter, Me., has been sold to J. Merles Bridges, of Waterville, and Edward Chase, of Clinton. For many years the mill manufactured cotton warp goods but it has been shut down for some time. A very valuable water power goes with the property and this was a large factor in bringing about the transfer.

Hinsdale (Mass.) Trading Corp's. properties will be sold at public auction June 17. This organization last fall took over the **Hinsdale Woolen Mills,** which had been operated under various managements, and an attempt was made to revive the industry. Hinsdale merchants advanced funds and employees gave their wages temporarily, but the effort proved unsuccessful.

General Textile Corp., Dudley, Mass., will operate the former **Perryville Woolen Mills, Inc.,** in that town and expect to get under way next week. The plant has been idle for nearly two years and was recently sold to Providence, R. I., interests, who organized the new corporation, which is represented by Atwood, Remington, Thomas & Levy, a Providence law firm. The machinery is now being put into shape for the resumption of operations. Former employees have been recalled to assist in the preparatory work.

Thomas Oakes & Co., Bloomfield, N. J., have awarded a number of miscellaneous contracts for completion of new one-story mill addition, 59x122 ft., for which general award recently was made to Salmond, Scrimshaw & Co., Arlington, N. J. The unit is estimated to cost $24,750, with equipment.

S. Stroock & Co., Inc. (Newburgh, N. Y.), officials have organized a subsidiary company to be known as the **Stroock Mfg. Co.** Louis Gersten will be president.

Windsor Mfg. Co., Philadelphia, Pa., worsted for men's wear, has started operations on a larger scale and is now operating two shifts.

S. & L. Combing Co., Woonsocket, R. I., capital $10,000, has been formed by Leroy B. Smith, of Woonsocket, and Julius A. Lofdal, of Cranston, to operate a wool combing mill.

Branch River Wool Combing Co., Woonsocket, R. I., will erect a large building for its wool sorting department on land adjoining the company's plant at Branch Village. The building, to cost about $100,000, will be used for wool storage as well as sorting.

Knit

Hagerstown (Md.) Hosiery Co. has been granted articles of incorporation by the Maryland State Tax Commission, with authority to issue 250 shares of stock of $100 par value. Incorporators are J. Edgar Young, James M. McGuffin and Bruce C. Lightner, all of Hagerstown. The company recently purchased the plant of **Antietam Knitting Co.,** sold in bankruptcy proceedings, and has been operating the plant since the sale.

Prudential Silk Hosiery Co., Inc., Belleville, N. J.—Milton M. Unger has been appointed receiver for this company on application of one of the directors. The plant has been on a curtailed basis for some time past.

Huntley, White & Jackson Co., High Point, N. C., has been organized with authorized capital stock of $100,000 and is now erecting a two-story building, 40x80 ft., in which men's high grade hose will be manufactured. It is expected that operations will begin about July 1. B. F. Huntley, Jr., Winston-Salem, N. C., Dr. W. L. Jackson and E. E. White, of High Point; and G. A. White, Taylorsville, N. C., are the incorporators. E. E. White will be active manager of the new mill.

Southern Mercerizing Co., Tryon, N. C., is progressing with the work of installing 60 new Scott & Williams Model K knitting machines, also 46 Banner machines on warp stripe fancies. The former will be for the manufacture of women's mercerized stockings. When

this new equipment has been installed, approximately 50 additional operatives will be employed, and the plant will then be able to produce 2,000 dozen stockings per day.

Fleetwood (Pa.) Hosiery Corp. is now running day and night, going on double shift.

Amber Hosiery Co., Philadelphia, Pa., has taken over the mill and equipment of **Martz Knitting Co.** for the manufacture of full-fashioned hosiery. A. Herman is president and treasurer; C. H. Bond, vice-president and B. Hemm, secretary.

LaSalle Hosiery Co., Philadelphia, Pa., has awarded general contract to William F. Lotz, Frankford and Oxford Aves., for a one-story mill unit on Hasbrook St., to cost about $12,000. Christian H. Fries, Frankford Ave., is architect.

Silk

Cheney Bros., South Manchester, Conn., are furnishing silk used for decorative and upholstery purposes in the new Waldorf-Astoria, New York.

Rossville Silk Mills Co., Binghamton, N. Y. The property of this company, including mill and equipment is scheduled to be offered at public auction on June 22.

Van Raalte Co., Dunkirk, N. Y., silk gloves, underwear and hosiery, has increased operations and is now running at full capacity.

Watertown (N. Y.) Silk Mfg. Co. has recruited a large number of weavers from Allentown, Pa., to handle the night shift which was recently started.

Champlain Silk Mills, Whitehall, N. Y., is dismantling its mill property and a portion of the machinery is being shipped to Japan.

***Lehigh Valley Silk Mills,** Bethlehem, Pa., have started on the complete modernization of the Lloyd Mill, which in the future will be devoted exclusively to the throwing of rayon. It is estimated that approximately $100,000 will be spent on this plant and other plants of the corporation within the next three months.

**Indicates previous mention of project.*

Robt. J. & R. Ritchie Co., Inc., Frankford (Philadelphia) Pa., resumed operations last week after a shutdown of nearly four months due to the upholstery weavers strike.

Klatz Silk Mfg. Co.'s (Blackstone, Va.) plant has been purchased by Shapley Investors, Inc., Brooklyn, N. Y., according to Samuel Barrow, president of the First National Bank of Blackstone. It was understood that the new owners plan re-opening the plant which would employ about 100 operatives. The sale price was not announced.

Rayon

New Bedford (Mass.) Rayon Co. is maintaining a capacity production schedule and proposes to continue on that basis for an indefinite period of time.

American Bemberg Corp., Elizabethton, Tenn., now has its first unit running 100% of productive capacity, due to increased demand for Bemberg yarns.

Finishing

Boyd Textile Corp.'s plant at Williamstown, Mass., has been sold to Hiram Bacon and John Rodenole. Operations in the mill ceased a year ago, the machinery and office equipment appraised at $584,325 having been removed. The floor space is 100,000 sq.ft. and the sale price is reported to have been in the neighborhood of $25,000.

Expert Dyeing Co., Paterson, N. J., has awarded a general contract to Gaetano Roberto, Paterson, for a one-story dye house addition, 91x126 ft., brick and steel type, to cost about $30,000, with equipment. Joseph DeRose, 119 Ellison St., Paterson, is architect.

Puritan Textile Printing Co., Central Falls, R. I., has been organized to establish a print works business, with Peter Franz as head.

Narragansett Finishing Co. is to move from Cranston, R. I., to the White Rock plant, formerly owned by B. B. and R. Knight Company, at Westerly, R. I.

Florence Dye Works, Woonsocket, R. I., have installed a complete new filter plant. Hungerford & Terry, Inc., Clayton, N. J., were the engineers.

Miscellaneous

New England Waste Process Co., Fairfield, Me., silk, cotton and wool waste, plans to rebuild plant destroyed by fire, at a cost of $200,000. Project will include mill, office and three warehouses. Luois Rosenthal is general manager.

Worcester (Mass.) Dusting Mill, Inc., sustained a loss of more than $5,000 by fire and water in its plant on May 11. The fire started from a spark from a picker machine and set off 22 sprinkler heads which quickly extinguished the blaze. Water caused more damage than the fire.

Rhode Island Braid Co., Inc., Providence, R. I., recently organized with a capital of 630 shares of stock, no par value, to operate a local mill, will be represented by Vincent Di Sandro, 434 Industrial Trust Building, Providence, one of the incorporators.

Schlegel Co., (Canada) Ltd., Toronto (Ont., Can.), subsidiary of the **Schlegel Mfg. Co.,** textile manufacturer with head office in Rochester, N. Y., is proceeding with all the arrangements for the operation of its Canadian plant at 163 Dufferin St., Toronto. George Odell, has been appointed manager.

Textile Patents

BOBBIN board. 1,797,464. Frank Davis, Providence, R. I.

BOBBIN for electrical weft-detecting. 1,797,932. Richard G. Turner, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

CIRCULAR knitting machine. 1,798,601. Joseph Haas and Russell Evans, Martinsburg, Va. Assigned to Interwoven Mills, Inc., New Brunswick, N. J.

CIRCULAR knitting machine. 1,798,514. Fred Attenborough, Harrington Park, Long Eaton, England.

COMBINED thread cutter and holder. 1,797,938. Harold L. Blanchard, Millbury, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

COTTON-BLOCKING cultivator. 1,797,231. James N. Herron, Taft, Texas.

COTTON harvester. 1,798,883. Victor E. Hunter, Frederick M. Abernathy and William H. Gholson, Elk City, Okla.

DRAG arrangement for the bobbins of spinning, doubling and like machines. 1,798,904. Henry Schneider, Lenzburg, Switzerland.

ELASTIC fabric. 1,797,693. Oscar F. Neidel, Westerly, R. I. Assigned to George C. Moore Co., Westerly, R. I.

FASHIONED heel and method of knitting. 1,798,804. William S. Parker, Rockford, Ill. Assigned to Burson Knitting Co., Rockford, Ill.

FIBER, fabric and article containing organic derivatives of cellulose. 1,798,836. Camille Dreyfus, New York, and Herbert Platt, Cumberland, Md. Assigned to Celanese Corp. of America.

FINISHING cloth, Method of and apparatus for. 1,797,754. Wilhelm B. Bronander, Montclair, N. J.

KNITTING machine. 1,797,436. Max C. Miller, Cumberland, R. I.

KNITTED stocking and process for producing the same. 1,799,070. Robert W. Scott, deceased, Babylon, N. Y., by Charles B. Barnes, Hingham, Mass., Charles J. McDermott, Brooklyn, N. Y., and Harrison G. Reynolds, Boston, Mass., executors. Assigned to Scott & Williams, Inc., New York.

LEASE ROD or spindle for insertion between the threads of the lease of weaving warp. 1,798,363. Ulrich Bischof, Aarau, Germany.

LOOM attachment. 1,797,652. William C. Gilmore, Greenville, S. C.

LOOM shuttle. 1,798,178. Wallace I. Stimpson, Hopedale, Mass. Assigned to Draper Corp., Hopedale, Mass.

LOOM temple roll. 1,798,847. Alfred Lagasse, Fall River, Mass.

METHOD of equalizing the color effect of cotton yarn to that of cuprammonium silk. 1,797,247. Fritz Steinberg, Barman-Langerfeld, Germany. Assigned to American Bemberg Corp., New York.

PICKER-STICK-retracting device. 1,797,952. Anthony D. Gargolinski, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

PILE FABRICS, Method of and apparatus for printing. 1,799,111. Alfred F. McCollum, Bloomsburg, Pa. Assigned to Magee Carpet Co., Bloomsburg, Pa.

SECTIONAL warp beam. 1,797,955. Ralph R. Hall, Chicago, Ill.

SPINNING, doubling or similar textile frame. 1,798,905. Henry Schneider, Zurich, Switzerland.

TEXTILE fabric. 1,797,429. Clarence Lipper, Philadelphia, Pa. Assigned to Lipper Mfg. Co., Philadelphia.

TEXTILE fabric. 1,798,111. James P. Shorrock, Holyoke, Mass. Assigned to B. F. Perkins & Sons, Inc., Holyoke, Mass.

TEXTILE fabric. 1,799,016. Robert Gould Jennings, Elimra, N. Y. Assigned to R. G. Jennings Yarn Cleaning Machine Co., Elmira, N. Y.

WARP MOISTENING device for looms. 1,801,830. Thomas Winstanley, Levenshulme, Manchester, and Albert Winstanley, St. Annes-on-the-Sea, England.

WINDING MACHINE. 1,801,378. Ernest R. Swanson, Cranston, R. I. Assigned to Universal Winding Co., Boston, Mass.

WINDING or spooling machine. 1,798,516. Albert E. Beachen, Providence, R. I. Assigned to Easton & Burnham Machine Co., Pawtucket, R. I.

YARN doubling and twisting machine. 1,798,817. Edwin W. Stone, Longmeadow, Mass. Assigned to Bigelow-Sanford Carpet Co., Thompsonville, Conn.

YARNS, Manufacture of. 1,798,359. Edward Slade, New York, N. Y.

YARN SPOOL. 1,801,503. Edgar F. Hathaway, Wellesley, and Walter Bixby, Boston, Mass. Assigned to Shawmutt Engineering Co., Boston, Mass.

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